CHAPTER 2
FOOD PRODUCT STANDARDS

2.4 CEREALS AND CEREAL PRODUCTS

2.4.1 ATTA

[82][1. Wheat Flour (Atta) and Resultant Wheat Flour (Resultant Atta)

(1) Description:

(a) "Wheat Flour (Atta)" means the product obtained exclusively by milling or grinding of clean wheat, which shall be free from abnormal flavours, odours, living insects, filth (impurities of animal origin including dead insects).

(b) "Resultant Wheat Flour (Resultant Atta)" means the product obtained by blending of various fractions in roller mills after separating semolina or maida during the processing of wheat, which shall be free from abnormal flavours, odours, living insects, filth (impurities of animal origin including dead insects).

(2) It shall conform to the following standards, namely: -

S.No.	**Parameter**	**Wheat Flour (*Atta*) or Resultant Wheat Flour (Resultant *Atta*)**
(1)	**(2)**	**(3)**
		Limits
1.	Moisture, % by mass, Not more than	14.0
2.	Total ash, % by mass (on dry basis), Not more than	2.0
3.	Ash insoluble in dilute HCl, % on dry mass basis, Not more than	0.15
4.	Gluten, % on dry mass basis, Not less than	6.0
5.	Alcoholic acidity (with 90 percent alcohol) expressed as H_2SO_4, % on dry mass basis, Not more than	0.18

6.	Crude fibre, % on dry mass basis, Not more than	2.5
7.	*Granularity	Not less than 98 percent by mass of that material shall pass through 500 micron I.S. sieve (35 mesh)
8.	Uric acid (Not more than), mg/kg	100 mg/kg

Note: **The parameter "Granularity" shall not be applicable for intermediate products which are not meant for direct consumption.*

(3) The product may contain food additives permitted in Appendix A.

(4) The product shall conform to the microbiological requirement given in Appendix B.

(5) The product shall be labelled in accordance with the Food Safety and Standards (Labelling and Display) Regulations, 2020.]

2. [70]**[Omitted]**

[77]**[3. Protein rich wheat flour (Protein prachur *atta*)**

1. Protein rich wheat flour (Protein prachur *atta*) means the product obtained by mixing wheat flour with Solvent extracted groundnut flour, Solvent extracted Soya flour and Whey Protein powder and other edible standardised flour as mentioned in regulations notified under Food Safety and Standards Act, 2006; either singly or a combination of these, up to an extent of 15.0 per cent. It shall not contain added flavouring and colouring agents. The product shall be free from abnormal flavours, odours, living insects, visible mould, filth (impurities of animal origins, including dead insects).
2. It shall conform to the following standards, namely: -

S.No.	Parameter	Limit
1.	Moisture % by mass, Not more than	13.0
2.	Acid insoluble ash, % by mass (on dry basis), Not more than	0.1
3.	Total Protein (N x 6.25), % by mass (on	15.0

	dry basis), Not less than	
4.	Total Dietary Fibre, % by mass (on dry basis), Not less than	7.0
5.	Alcoholic acidity, % Not more than	0.18
6.	Gluten, % by mass (on dry basis), Not less than	5.0
7.	* Urease activity(pH units rise), Not more than	0.02
8.	Uric Acid, mg/kg, Not more than	100

* Urease activity test shall be applicable if soy flour is used.]

2.4.2 MAIDA:

[73]**[1. Maida (Refined Wheat flour). -** (1) Maida (Refined wheat flour) means the product obtained from the clean grains of wheat by grinding or milling processes in which the bran and germ are essentially removed and the remainder is comminuted to a suitable degree of fineness. It shall be free from abnormal flavours, odours, living insects, filth (impurities of animal origin including dead insects).

(2) It shall conform to the following requirements, namely: -

TABLE

S. No.	Requirements	Limit
1.	Moisture, % by mass (not more than)	14.0
2.	Total ash, % on dry mass (not more than)	1.0
3.	Ash insoluble in dilute HCl, % on dry mass basis (not more than)	0.1
4.	Gluten, % on dry mass basis (not less than)	7.5
5.	Alcoholic acidity (with 90 percent alcohol) expressed as H_2SO_4, % on dry mass basis, not more than	0.12
6.	*Granularity % (not less than)	98 shall pass through 212

		micron IS sieve (70 mesh)
7.	Uric acid (not more than), mg/kg	100

* The parameter 'Granularity will not be applicable for intermediate products which are not meant for direct consumption.]

2. [70][Omitted]

[77][3. Protein rich refined wheat flour (Protein prachur maida)

1. Protein rich refined wheat flour (protein prachur maida) means the product obtained by mixing maida (refined wheat flour) with solvent extracted groundnut flour, solvent extracted soya flour, Whey Protein flour; either singly or a combination up to an extent of 15.0 per cent. Soya flour individually shall not be more than 10.0 per cent and Whey Protein powder shall not be more than 5.0 per cent. It shall not contain added flavor and colouring agents. The product shall be free from abnormal flavours, odours, living insects, visible mould, filth (impurities of animal origins, including dead insects).

2. It shall conform to the following standards, namely: -

S. No.	Parameter	Limit
1.	Moisture % by mass, Not more than	12.0
2.	Acid insoluble ash, % by mass (on dry basis), Not more than	0.1
3.	Total Protein (N x 6.25), % by mass (on dry basis), Not less than	15.0
4.	Total Dietary Fibre, % by mass (on dry basis), Not less than	3.0
5.	Alcoholic acidity, % Not more than	0.12
6.	Gluten, % by mass (on dry basis), Not less than	6.0

7.	Urease activity (pH units rise), Not more than	0.02
8.	Uric Acid, mg/kg, Not more than	100]

[37][4. "**Durum wheat maida**" means the product prepared from grains of durum wheat (*Triticum durum* Desf.) by grinding or milling process in which the bran and germ are essentially removed and the remainder is comminuted to a suitable degree of fineness, which shall conform to the following standards, namely: -

Sl. No.	parameter	limit
(1)	Moisture (percent by mass), Max.	13.0
(2)	Total ash (on dry matter basis), Max %	1.75
(3)	Acid insoluble ash in dilute HCl (on dry matter basis), Max %	0.15
(4)	Protein (Nx6.25) (on dry matter basis), Min %	11.0
(5)	Alcoholic acidity (with 90 per cent. alcohol expressed as $H_2SO_{4)}$, Max %	0.12
(6)	Particle size	Minimum 80 per cent. shall pass through a 315 micron silk gauze or man-made textile sieve]

[73][**2.4.3 Semolina (Suji or Rawa). -(**1) Semolina (suji or rawa) means the product obtained from clean grains of wheat by grinding or milling processes in which the bran and germ are wholly/ partially removed and the remainder is comminuted to a suitable degree of fineness. It shall be free from abnormal flavours, odours, living insects, filth (impurities of animal origin including dead insects).

(2) It shall conform to the following requirements, namely: -

TABLE

S. No.	Requirements	Limit
1.	Moisture, % by mass (not more than)	14.5
2.	Total ash, % on dry mass (not more than)	1.0
3.	Ash insoluble in dilute HCl, % on dry mass basis (not more than)	0.1
4.	Gluten, % on dry mass basis (not less than)	6.0
5.	Alcoholic acidity (with 90 percent alcohol) expressed as H_2SO_4, % on dry mass basis, not more than	0.15
6.	Uric acid (not more than), mg/kg	100]

[75]**[2.4.4 BESAN. -** (1) Besan means the product obtained by grinding dehusked Bengal gram (*Cicerarietinum*). It shall not contain any added colouring matter. The product shall be free from abnormal flavours, odours, living insects, filth (impurities of animal origins, including dead insects).

(2) It shall conform to the following standards, namely:-

S. No.	**Parameter**	**Limit**
(1)	Moisture % by mass (Not more than)	12.0
(2)	Ash insoluble in dilute hydrochloric acid, % Not more than	0.3
(3)	Alcoholic acidity (as H_2SO_4) with 90 percent alcohol by mass, not more than	0.18
(4)	Protein (Nx6.25), % by mass (on dry basis), Not less than	20.0
(5)	Uric Acid, mg/kg, Not more than	100]

2.4.5 Pearl Barley (Jau)

1. Pearl Barley (Jau) shall be the product obtained from sound and clean barley (Horbeum vulgare or hordeum distichon). It shall be whitish in colour and shall be free from fermented, musty or other objectionable taste or odour, adulterants and insect and fungus infestation and rodent contamination. It shall not contain other foodgrains more than 1 per cent by weight.

Barley powder shall be the product obtained by grinding clean and sound dehusked barley (Hordeum vulgare or Hordeum distichon) grains. Barley starches shall not be less than 98.0 per cent by weight.
Barley powder shall also conform to the following standards namely:—

Total ash (on dry basis)	Not more than 1.0%
Ash insoluble in dilute hydrochloric acid (on dry basis)	Not more than 0.1%
Crude fibre (on dry basis)	Not more than 0.5%
Alcoholic acidity (as H2SO4) with 90 per cent alcohol)	Not more than 0.10 per cent

2. Wholemeal barley powder or barley flour or choker yukt jau ka churan means the product obtained by grinding clean and sound dehusked barley (Hordeum vulgare or Hordeum distichun) grains free from rodent hair and excreta]. It shall conform to the following standards:—

Moisture	Not more than 14.0 per cent (when determined by heating at 130-133°C for 2 hours).
Total ash	Not more than 3.0 per cent (on dry weight basis).
Ash insoluble in dilute HCl	Not more than 0.5 percent (on dry weight basis).
Alcoholic acidity (with 90 per cent alcohol) expressed as H2SO4 (on dry weight basis)	Not more than 0.17 per cent

2.4.6 Food grains:

1. Food grains meant for human consumption shall be whole or broken kernels of cereals, millets and pulses. In addition to the undermentioned standards to which foodgrains shall conform, they shall be free from Argemone, Maxicana and

Kesari in any form. They shall be free from added colouring matter. The foodgrains shall not contain any insecticide residues other than those specified in regulation 2.3.1 of Food Safety and Standards (Contaminants, Toxins and Residues) Regulation, 2011 and the amount of insecticide residue in the foodgrains shall not exceed the limits specified in Regulation 2.3.1. of the said Table Food Safety and standards (Contaminants, Toxins and Residues) Regulation, 2011. The foodgrains meant for grinding/processing shall be clean, free from all impurities including foreign matter (extraneous matter).

2. Wheat

Description: Wheat shall be the dried mature grains of Triticum aestivum Linn. or Triticum vulgare vill, triticum drum Desf., triticum sphaerococcum perc., Triticum dicoccum schubl., Triticum Compactum Host. It shall be sweet, clean and wholesome. It shall also conform to the following standards namely:—

(i)	Moisture—	Not more than 14 per cent by weight (obtained by heating the pulverised grains at 130°C-133°C for two hours)
(ii)	Foreign matter — (Extraneous matter)	Not more than 1 per cent by weight of which not more than 0.25 per cent by weight shall be mineral matter and not more than 0.10 per cent by weight shall be impurities of animal origin.
(iii)	Other edible grains	Not more than 6 per cent by weight.
(iv)	Damaged grainsù	Not more than 6.0 per cent by weight including kernel bunt afected grains and got affected grains. The limit of kernel bunt affected grains and ergot affected grains shall not exceed 3.0 per cent and 0.05 percent by weight, respectively.
(v)	Weevilled grains—	Not more than 10 per cent by count.
(vi)	Uric acid—	Not more than 100 mg. per kg.
[51][Omitted]		

(viii)	Deoxynivalenol (DON)	Not more than 1000 micrograms per kilogram

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 12 per cent by weight.

3. MAIZE:

Maize shall be the dried mature grains of Zea mays Linn. It shall be sweet, hard, clean and wholesome. It shall also conform to the following standards, namely:-

(i)	Moisture-	Not more than 16.0 per cent by weight (obtained by heating the pulverised grains at 130oC-133oC for two hours).
(ii)	Foreign matter — (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
(iii)	Other edible grains -	Not more than 3 per cent by weight.
(iv)	Damaged grains-	Not more than 5 per cent by weight.
(v)	Weevilled grains-	Not more than 10 per cent by count.
(vi)	Uric acid-	Not more than 100 mg. per kg.
(vii)	[51][Omitted]	

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 9 per cent by weight.

[73, 82][clause 4 omitted]

[66][clause 5 omitted]

[51][Clause 6 to 14 omitted]

15. Any other food grains not specified above shall conform to the following standards, namely:-

(i)	Moisture-	Not more than 16 per cent by weight (obtained by heating the pulverized grains at 130°C-133°C for two hours).
(ii)	Foreign matter – (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
(iii)	Other edible grains	Not more than 6 per cent by weight.
(iv)	Weevilled grains-	Not more than 10 per cent by count.
(v)	Damaged grains-	Not more than 5 per cent by weight.
(vi)	Uric acid-	Not more than 100 mg. per kg.
(vii)	[51][Omitted]	

Provided that total of foreign matter, other edible grains and damaged grains shall not exceed 12.0 per cent by weight.

Explanation — For the purposes of items in regulation 2.4.6 (2-14): —

(a) "foreign matter" means any extraneous matter other than food grains comprising of-

(i) inorganic matter consisting or metallic pieces, sand, gravel, dirt, pebbles, stones, lumps of earth, clay and mud, animal filth and in the case of rice, kernels or pieces of kernels, if any, having mud sticking on the surface of the rice, and

(ii) organic matter consisting of husk, straws, weed seeds and other inedible grains and also paddy in the case of rice;

(b) poisonous, toxic and/or harmful seeds - means any seeds which is present in quantities above permissible limit may have damaging or dangerous effect on health, organoleptic properties or technological performance such as

dhatura (D. fastur linn and D. stramonium linn), corn cokle (Agrostemma githago L, Machai Lallium remulenum linn), Akra (Vicia species).

(c) "Damaged grains" means kernels or pieces of kernels that are sprouted or internally damaged as a result of heat, microbe, moisture or whether, viz., ergot affected grain and kernel bunt grains;

(d) "Weevilled grains" means kernels that are partially or wholly bored by insects injurious to grains but does not include germ eaten grains and egg spotted grains;

(e) "Other edible grains" means any edible grains (including oil seeds) other than the one which is under consideration.

[19][**16. UNPROCESSED WHOLE RAW PULSES** (not for direct human consumption): The limits for foreign matter (extraneous matter) shall be maximum 3.0 per cent. by weight of which the maximum 0.5 per cent. by weight may be the inorganic matter and impurities of animal origin.

In addition, unprocessed whole raw pulse shall conform to the requirements of other standards referred to in this regulation. Pulses for direct human consumption shall conform to the standards of the relevant pulse prescribed in the regulation 2.4.6.]

[26][**17**. **OATS**

(**1**) Oats shall be dried mature grains of *Avena sativa or Avena byzantina*. It shall be sound, clean, wholesome, and free from toxic seeds, live insects and visible mold. It shall also confirm to the following standards, namely: -

(i)	Moisture	Not more than 14.0 per cent. by weight
(ii)	Foreign matter (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of

		animal origin.
(iii)	Other edible grains (grains other than oats)	Not more than 3 per cent. by weight.
(iv)	Damaged grains (including pieces of kernels that show visible deterioration due to moisture, weather, disease, insects, mould, heating, fermentation, sprouting or other causes)	Not more than 3 per cent. by weight.
(v)	Weevilled grains(weevilled grains include weevil infested grains and insect bored (which may be partially or wholly bored by insects)	Not more than 2 per cent. by count count out of which not more than 0.5 per cent. by count shall be insect bored.
(vi)	Minimum test weight (weight of hundred litre volume of oats expressed as kilograms per hectolitre (kg/hl).	Not less than 46 kg/hl
(vii)	Hull-less and broken kernels	Not more than 5 per cent. by weight.
(viii)	Uric acid	Not more than 100 mg per kg.
(ix)	Ergot	Sclerotium of the fungus *Claviceps purpurea* 0.05 per cent. m/m max

(2) Food Additives

The product shall contain food additives specified in Appendix A appended to these regulations.

(3) Contaminants, Toxins and Residues

The product contaminants, toxin and residues shall be in accordance with the Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011.

(4) Food Hygiene

(a) The product shall be prepared and handled in accordance with the guidelines provided in Schedule 4 of the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011.

(b) The product shall conform to the microbiological requirement specified in Appendix B to these regulations.

(5) Labelling

The product shall be labelled in accordance with the Food Safety and Standards (Packaging and Labelling) Regulations, 2011.

(6) Method of Sampling and Analysis

The method of sampling and analysis shall be in accordance with the FSSAI Manual of Method of Analysis of Food]

[37][**18**. "**Quinoa**" means the dried matured grain obtained from the plant of *Chenopodium quinoa from* which saponin has been removed by washing, scouring, dehulling or by any other suitable process, which shall conform to the following Standards, namely:-

Sl. No.	parameter	limit
(1)	Moisture (percent by mass), Max.	12.0
(2)	Extraneous matter	Not more than 1 per cent. by mass of which not (Extraneous matter) more than 0.25 per cent. by mass shall be mineral matter and not more than 0.10 per cent. by mass shall be impurities of animal origin.
(3)	Other edible grains, Max %	0.5

(4)	Damaged grains, Max %	3.0
(5)	Uric acid (Not more than)	100 mg/kg
(6)	Saponin Content, Max. %	0.1]

[48][**19. Durum Wheat**

(1) Durum wheat shall be dried mature grains obtained from varieties of the species *Triticum durum Desf.*, which shall be free from abnormal flavours, odours, living insects and mites and shall conform to the following standards:

Parameters	Limits
Moisture (per cent. by mass), Maximum	13.0
Protein (per cent. on dry matter basis), Minimum	11.0
Beta Carotene (Yellow pigment), Minimum	5.0 ppm
Extraneous matter	Not more than 1 per cent. by mass out of which not more than 0.25 per cent. by mass shall be mineral matter and not more than 0.10 per cent. by mass shall be impurities of animal origin
Other edible grains (per cent. by mass), Maximum	3.0
Damaged grains, (per cent. by mass), Maximum	4.0
Weevil Affected Grains (number of Grains per 100 g), Maximum	4
Minimum test weight (weight of 100 litre volume expressed in Kg)	70

Shrunken and broken kernels (per cent. by mass), Maximum	6.0
Ergot (per cent. by mass), Maximum	0.5
Uric acid (mg per kg), Maximum	100

(2) Food additives

The product may contain food additives permitted in Appendix A.

(3) Contaminants, toxins and residues

The product covered in this standard shall comply with the Food Safety and Standards (Contaminants, toxins and residues) Regulations, 2011.

(4) Food hygiene

(a) The product shall be prepared and handled in accordance with the guidance provided in Schedule 4 to the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011 and any other such guidance provided from time to time under the provisions of the Food Safety and Standards Act, 2006(34 of 2006).

(b) The product shall conform to the microbiological requirement given in Appendix B.

(5) Packaging and labelling

The product covered by this Standard shall be labelled in accordance with the Food Safety and Standards (Packaging and Labelling) Regulations, 2011.

(6) Method of analysis

As provided in the relevant Food Safety and Standards Authority of India Manual on Analysis of Food.

82[Clause 20 omitted]

82[Clause 21 omitted]

[51][**22. Pulses:** (1) This standard applies to the whole or shelled (de-husked) or split pulses and they shall be free from toxic or noxious seeds and added coloring matter and also applies to mix of various pulses covered in this standard.

(2) The following pulses shall be covered under his standards, namely: -

(I) Lentil (Masur) - *Lenil esculenta* Moench *or Lens culinaris* Medik *or Ervem lens* Linn*;*
(II) Black gram (Urd) – Phaseolus mungoLinn;
(III) Green gram (Moong) - Phaseolus aureus Roxb., Phaseolus radiatus Roxb;
(IV) Bengal gram (Chana or Chick pea) or Kabuli chana or Chhole or (green chick pea) hara chana - Cicer arietinum Linn;
(V) Red gram (Arhar) – Cajanus cajan (L) Millsp;
(VI) Horse gram (Kulthi) –Dolichosbiflorus;
(VII) Field bean (Black, Brown, White), Sem - Phaseolus vulgaris;
(VIII) Peas dry (Matra) –Pisumsativum;
(IX) Soybean – Glycine max Merr.);
(X) Rajmah or Double beans or Broad beans or Black beans – (Phaseolus vulgaris);
(XI) Lobia or black eyed beans or black eyed white lobia – (Vignacatjang);
(XII) Moth bean (matki) – (Phaseolusaconitifolius Jacq.).

(3) The pulses shall conform to the following standards, namely: -

Sl.No.	Parameter	Limit	
(I)	Moisture Content (per cent. by mass), Max.	14	Pulses without seed coat - 12
(II)	Extraneous Matter	Not more than 1 per cent. by mass of which not more than 0.25 per cent. by mass shall be mineral matter and not more than 0.10 per cent. by mass shall be impurities of	

		animal origin.
(III)	Defects (I) Seeds with serious defects. (Seeds in which the cotyledons have been affected or attacked by pests; seeds with very slight traces of mould or decay; or slight cotyledon staining.)	Not more than 1 per cent.
	(II) Seeds with slight defects. (Seeds which have not reached normal development; seeds with extensive seedcoat staining, without the cotyledon being affected; seeds in which the seedcoat is wrinkled, with pronounced folding or broken pulses *)	Not more than 7 per cent. of which broken pulses must not exceed 3 per cent.
(IV)	Other edible pulses/ grains ,by mass	Not more than 2 per cent.
(V)	Discoloured seeds by mass	Not more than 3 per cent.
(VI)	Uric acid (not more than)	100 mg per kg.

Note- * Broken in whole pulse in which the cotyledon is separated or one cotyledon is broken and broken in split pulses are pulses in which the cotyledon is broken.

[82][**23. Millets**. - (1) This standard applies to the whole or dehulled millets, which shall be free from poisonous, toxic, noxious, or obnoxious seeds and added coloring matter, rodent hair and excreta.

(2) The following millets shall be covered under this standard, namely:-

(i) Amaranthus (Chaulai or Rajgira)-*Amaranthus caudatus, A. cruentus, A. Hypochondriacus*
(ii) Barnyard Millet (Samakechawal or Sanwa or Jhangora)-*Echinochloa crus-galli, E. Colona*
(iii) Brown top (Korale)-*Urochloa ramosa*
(iv) Buckwheat (Kuttu)-*Fagopyrum esculentum*
(v) Crab finger (Sikiya)-*Digitaria sanguinalis*
(vi) Finger Millet (Ragi or Mandua)-*Eleusine coracana*
(vii) Fonio (Acha)-*Digitaria exilis* (White fonio); *D. iburua* (Black fonio)
(viii) Foxtail Millet (Kangni or Kakun)-*Setaria italica*
(ix) Job's tears (Adlay) – *Coix lacryma-jobi*
(x) Kodo Millet (Kodo)-*Paspalum scorbiculatum*
(xi) Little Millet (Kutki)-*Panicum sumatrense*
(xii) Pearl Millet (Bajra)-*Pennisetum glaucum, Pennisetum americanum, Pennisetum typhyoideum*
(xiii) Proso Millet (Cheena)-*Panicum miliaceum*
(xiv) Sorghum (Jowar)-*Sorghum bicolor*
(xv) Teff (Lovegrass)-*Eragrostis tef*

(3) The millets shall conform to the following standards, namely:-

S.No.	**Parameter**	**Limit**
(1)	**(2)**	**(3)**
1.	Moisture Content (not more than, % by mass)	13.0 for whole grains 13.0 for dehulled grains
2.	Extraneous Matter	Not more than 1.0 per cent by mass , of which not more than 0.25 per cent by mass shall be mineral matter and not more than 0.10 per cent by mass shall be impurities of animal origin.
3.	Other edible grains (not more than, % by mass)	2.0

4.	Grains with serious defects. (Grain in which the cotyledon has been affected or attacked by pests; grains with very slight traces of mould or decay; or cotyledon staining.) (not more than, % by mass)	1.0
5.	Grains with slight defects. (Grains which have not reached normal development; grains with extensive seed coat staining, without the cotyledon being affected; grains in which the seed coat is wrinkled, with pronounced folding or broken grain) (not more than, % by mass)	7.0
6.	Weevilled Grains, (not more than, % by count)	4
7.	Immature and Shrivelled grains (not more than, % by mass)	5.0
8.	Uric acid (not more than, mg/kg)	100]

[66][**24. Rice.-** (1) Rice shall be whole and broken kernels obtained from the species *Oryza sativa L* and shall be of the following types, namely:-

1. Brown Rice (De- Husked) is obtained from paddy by removing husk and the process of de -husking and handling may result in some loss of bran;

2. Milled Rice is obtained by milling or polishing of dehusked rice of paddy and also removal of all or part of the bran and germ by polishing;

3. Parboiled brown (De- Husked) rice (Brown rice of parboiled paddy) is obtained by removing husk of parboiled paddy;

4. Milled Parboiled rice is obtained from de- husked parboiled paddy and removal of all or part of the bran and germ by polishing.

(2) They shall conform to the following standards for rice, namely:-

S.No.	Requirements	Limits			
		Brown Rice (De-Husked)	Milled Rice	Parboiled brown (De- Husked) Rice(Brown rice of parboiled paddy)	Milled Parboiled Rice
(i)	Moisture per cent by mass, (Not more than)	15.5	15.5	15.5	15.5
(ii)	(a) organic extraneous matter (per cent by mass)	1.5	0.8	1.5	0.8
	(b)Inorganic extraneous matter[out of this impurities of animal origin(including dead insects)shall not be more than 0.1 per cent] (per cent by mass)	0.2	0.2	0.2	0.2
(iii)	Weevilled kernels(per cent by count), not more than	5	5	5	5
Defective Kernels					
(iv)	Heat – Damaged Kernels (per cent m/m) , not more than	6	5	10	8

(v)	(a)Damaged Kernels (per cent m/m) , not more than				
	(b)Kernels with Pin point (per cent m/m) , not more than	-	4.0	-	4.0
(vi)	Immature Kernels(per cent m/m) , not more than	12.0	0.5	12.0	0.5
(vii)	Chalky Kernels(per cent m/m) , not more than	11.0	5.0	Nil	0.1
(viii)	Uric acid (mg per kg), maximum	100	100	100	100

Explanation. - For the purposes of this clause,-

(a) "Heat-Damaged" means kernels, whole or broken, that have changed their normal colour as a result of heating;

(b) "Damaged Kernels" means kernels, whole or broken, showing obvious deterioration due to moisture, pests, diseases, or other causes, but excluding heat-damaged kernels;

(c) "Immature Kernels" are unripe or undeveloped whole or broken kernels;

(d) "Chalky Kernels" means whole or broken kernels except for glutinous rice, of which at least three quarters of the surface has an opaque and floury appearance;

(e) "Kernels with Pinpoint" are kernels or pieces of kernels having minute black spot of pin point size.

Insertion of the provision

24(a) Rice Flour for preparation of Fortified Rice Kernel (FRK)

(1) Rice flour used for preparation of fortified rice kernel shall be white to off white powder. It shall be free flowing with characteristic odour and no off odour.It shall be free from foreign matter.

(2) Rice flour used for preparation of fortified rice kernel shall conform to the following standards-

S.No.	Requirement	Limit
1.	Particle size (%) (Not less than)	90% passes through 60 mesh
2.	Moisture % by mass, Not more than	14.0
3.	Acid insoluble ash, % by mass (on dry basis), Not more than	0.15
4.	Alcoholic acidity, %Not more than	0.18
5.	Uric Acid, mg/kg, Not more than	100.0
6.	Yeast and Mould Count(cfu/g)	1×10^2
7.	Aerobic Plate Count (cfu/g)	1×10^4

(3) In addition to the above, rice flour used for preparation of fortified rice kernel shall comply with the provisions of Food Safety and Standards (Contaminants, Toxins and Residues) Regulation, 2011 as applicable.

24(b) Vitamin-Mineral Premix for Preparation of Fortified Rice Kernel (FRK)

(1) Vitamin and Mineral Premix (VMP) is combination of micronutrients (vitamins and minerals) in desired proportion ready for use as fortificant in the manufacturing of fortified rice kernels.

(2) Vitamin and Mineral Premix shall be free flowing powder without any

lumps, made from food grade form of Vitamins and minerals and shall contain vitamins and minerals in specified proportions.

(3) Vitamin and mineral premix shall be white to off white in colour with faint odour. It shall be easy to use and free from any objectionable or undesirable colour, odour and foreign matter.

(4) Vitamin and mineral premix shall be manufactured in premises built and maintained under hygienic conditions.

(5) Vitamin and mineral premix shall conform to the following physico chemical requirements-

S.No.	Requirement	Limit
1.	Moisture % by mass, Not more than	11.0
2.	Particle size of micronized ferric pyrophosphate (D90 particles), µm	1-3
3.	Yeast and Mould Count (cfu/g)	1×10^2
4.	Aerobic Plate Count (cfu/g)	1×10^4

(6) Vitamin and mineral premix shall contain following chemicals, which shall be minimum 95% of stated value on the label in case of premix concentrate-

(a) Micronized ferric pyrophosphate or sodium iron (III) ethylene diaminetetraacetatetrihydrate (sodium feredetate -NaFeEDTA);
(b) Folic acid; and
(c) Cyanocobalamine or hydroxycobalamine.

(7) Vitamin and mineral premix may also contain following chemicals, which shall be minimum 95% of stated value on the label in case of premix concentrate-

(a) Zinc oxide (ZnO);
(b) Retinyl palmitate;
(c) Thiamine hydrochloride, or thiamine mononitrate;
(d) Riboflavin, or riboflavin 5'-phosphate sodium;

(e) Nicotinamide, or nicotinic acid; and

(f) Pyridoxine hydrochloride.

(8) In addition to the above, vitamin and mineral premix shall comply with the provisions of Food Safety and Standards (Contaminants, Toxins and Residues) Regulation, 2011

24(c) Fortified Rice Kernel

(1) Fortified Rice Kernels (FRK) are Rice shaped kernels containing vitamins and mineralsproduced through extrusion.

(2) Fortified rice kernels shall resemble the rice as closely as possible in final attributesand shall be free from off odour.

(3) Fortified rice kernels shall conform to the following physico chemical requirements-

S. No.	Requirement	Limit
1.	Moisture % by mass, Not more than	12.0
2.	Broken rice kernels, percent by mass, Not more than	1.0
3.	Foreign matter, percent by mass,Max	0.001
4.	Damaged Kernels including Heat-Damaged	Absent
5.	Discolored grains	Absent
6.	Chalky grains	Absent
7.	Admixture with any other grains including non-fortified rice	Absent
8.	Uric Acid, mg/kg, on mass basis, Not more than	100.0
9.	Yeast and Mould Count (cfu/g)	1×10^2
10.	Aerobic Plate Count (cfu/g)	1×10^4

(4) Fortified rice kernels shall also conform to the following requirements of fortificants-

S. No.	Micronutrients	Sources	Fortificans level for 1:50 blending ratio	Fortificants level for 1:100 blending ratio
1.	Iron, mg/100 g	Micronised Ferric pyrophospahe; or	140 - 212.5	280 - 425
2.		Sodium iron (III) ethylenediamine tetraacetate trihydrate (sodium feredetate-NaFeEDTA)	70 - 106.25	140 - 212.5
3.	Folic acid, µg/100 g	Folic acid	375 - 625	750 - 1250
4.	Vitamin B12 µg/100 g	Cyanocobalamine or Hydroxycobalamine	3.75 - 6.25	7.5 - 12.5

In addition, fortified rice kernels may also be fortified with following micronutrients, singlyor in combination, at the level given in the table below:

S. No.	Micronutrients	Sources	Fortificants level for 1:50 blending ratio	Fortificants level for 1:100 blending ratio
1.	Zinc, mg/100 g	Zinc oxide	50 - 75	100 - 150
2.	Vitamin A, µg RE/100 g	Retinyl Palmitate	2500 - 3750	5000 - 7500
3.	Thiamine, (Vitamin B1), mg/100 g	Thiamine hydrochloride or Thiamine mononitrate	5 - 7.5	10 - 15
4.	Riboflavin (Vitamin B2),	Riboflavin or Riboflavin 5'-phosphate sodium	6.25 - 8.75	12.5 - 17.5

	mg/100 g			
5.	Niacin (Vitamin B3), mg/100 g	Nicotinamide or Nicotinic acid	62.5 - 100	125 - 200
6.	Pyridoxine (Vitamin B6), mg/100 g	Pyridoxine hydrochloride	7.5 - 12.5	15 - 25

Note: FRK with fortificant levels 1:50, or 1:100 shall comply with standards given at sub-clause (3) of clause 24(c).

(5) In addition to the above, Fortified rice kernels shall comply with the provisions of Food Safety and Standards (Contaminants, Toxins and Residues) Regulation, 2011 as specified.

(6) Fortified Rice Kernel shall only be sold for industrial purpose for manufacturing fortified rice. It shall neither be sold in loose form nor to be sold directly to the consumer.

(7) Each package of Fortified Rice Kernel shall carry following statements-

The Ratio in which FRK is to be blended with rice kernels "1:50 OR 1:100"

'NOT TO BE CONSUMED AS AN INDEPENDENT PRODUCT'

'NOT TO BE CONSTRUED AS SUBSTITUTE FOR RICE OR RICE FLOUR'

[Operationalized vide direction F.No. STD/FA/38/FSSAI dated 23.06.2022; Re-operationalized w.e.f 23.12.2022 vide direction F.No. SS-T010/1/2023-Standard-FSSAI dated 11.04.2023. The provisions with respect to Yeast and Mould Count and Aerobic Plate Count parameter of 'Rice flour for preparation of Fortified Rice Kernel (FRK)' stand withdrawn from the date of issue of direction dated 11.04.2023;

Provisions specified in direction dated 11.04.2023 re-operationalized w.e.f 23.06.2023 vide direction F.No. SS-T010/1/2023-Standard-FSSAI-Part(1) dated 25.09.2023.]

25. **Chia Seeds**-(1) Chia seeds (*Salvia hispanica L*) are obtained from the plant of mint family (*Labiatae*).

(2) It shall conform to the following standards, namely:-

S.No.	Requirements	Limits
(i)	Moisture(per cent m/m), not more than	11.5
(ii)	Extraneous matters	Not more than 1 per cent. by mass of which not (Extraneous matter) more than 0.25 per cent. by mass shall be mineral matter and not more than 0.10 per cent. by mass shall be impurities of animal origin
(iii)	Other edible grains per cent by mass(Not more than)	0.5
(iv)	Damaged grains per cent by mass (Not more than)	3.0
(v)	1000 grain mass (gm), Range	1.2 -1.6
(vi)	Acidity of extracted fat (mg KOH/gm), not more than	2.0
(vii)	Uric acid (mg per kg), maximum	100 .]

[81][**26. Basmati Rice.** - (1) Basmati Rice shall be mature kernels of the varieties of *Oryza sativa* L. notified under the Seeds Act, 1966 (54 of 1966) as Basmati, which shall possess natural fragrance, characteristic of basmati rice both in raw and cooked forms and shall be free from artificial colouring, polishing agents and artificial fragrances.

(2) Basmati Rice shall be of the following types, namely: -

(a) Brown Basmati Rice (De- Husked) is paddy rice from which the husk only has been removed and the process of de-husking and handling may result in some loss of bran.

The kernels shall be long, slender, light brown in colour having vitreous lustre (glossy in appearance);

(b) Milled Basmati Rice is de-husked rice from which all or part of the bran and germ has been removed by milling and the kernels shall be long, slender, white to creamy white or grayish colour and translucent;

(c) Parboiled brown (De- Husked) basmati rice (Brown basmati rice of parboiled paddy) may be processed from paddy that has been soaked in water so that the starch is fully gelatinized, followed by a drying process. The kernels shall be long, slender, brownish in colour;

(d) Milled Parboiled Basmati Rice may be processed from husked rice that has been soaked in water and subjected to heat treatment so that the starch is fully gelatinized, followed by a drying process, and the kernels shall be long, slender, creamy white, yellowish, brownish or grayish in colour and translucent;

(3) They shall conform to the following standards, namely: -

S. No.	**Parameters**	**Brown Basmati Rice (De-Husked)**	**Milled Basmati Rice**	**Parboiled brown (De-Husked) basmati rice(Brown basmati rice of parboiled paddy)**	**Milled Parboiled Basmati Rice**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
1	Average Length (mm)	7.0 and above	6.61 and above	7.0 and above	6.61 and above
2	Average Length – breadth ratio	3.5 and above	3.5 and above	3.5 and above	3.5 and above
3	Average cooked rice	12.0 and	12.0 and	12.0 and	12.0 and

	length (mm)	above	above	above	above
4	Average volume expansion ratio (More than)	3.5	3.5	3.5	3.5
5	Average pre-cooked milled rice breadth (mm), Not more than	2.0	2.0	2.0	2.0
6	Elongation ratio after cooking (Not less than)	1.7	1.7	1.5	1.5
7	Moisture per cent. by mass, not more than	14.0	14.0	14.0	14.0
8	Organic extraneous matter (per cent.by mass), not more than	1.0	1.0	1.0	1.0
9	Inorganic extraneous matter (per cent.by mass), not more than	0.1	0.1	0.1	0.1
10	Paddy grains (per cent by mass), not more than	0.8	0.3	0.3	0.3
11	Other varieties of non basmati rice (per cent. by mass), not more than	15.0	15.0	15.0	15.0
12	Under milled and red striped or red grains (per cent. by mass), not more than	3.5	3.5	3.5	3.5
13	Chalky grains (per cent. by mass), not more than	7.0	7.0	2.0	1.0
14	Green grains (per cent. by mass), not	6.0	nil	6.0	nil

	more than				
15	Broken and fragments (per cent. by mass), not more than	5.0	5.0	5.0	5.0
16	Damaged discoloured grains (per cent. by mass), not more than	1.0	1.0	1.0	1.0
17	Amylose content Dry mass basis (per cent)	20-25	20-25	20-25	20-25
18	Alkali spreading value (ASV)	4.0-7.0	4.0-7.0	4.0-7.0	4.0-7.0
19	Uric acid (mg per kg), not more than	100	100	100	100

Note: The confirmation for Basmati Rice variety shall be done by Polymerase Chain Reaction (PCR) test, if require

Broken basmati rice: It shall be of following name(s)

Basmati Rice Tibar
Basmati Rice Dubar
Basmati Rice Mini Dubar
Basmati Rice Mogra
Basmati Rice Mini Mogra

Note: - For broken basmati rice, the parameter at S.No.1 to 6 of this sub-clause shall not apply and rest other parameters with their limits and other provisions shall be applicable.

Explanation. - For the purposes of this clause -

(a) broken and fragments includes pieces of rice kernels which are less than three fourth of a kernel;

(b) chalky kernels are whole or broken kernels except for glutinous rice, of which at least three quarters of the surface has an opaque and floury appearance;

(c) damaged, discoloured grains include rice kernels, broken fragments of whole kernels that are internally damaged or discoloured (including black grains), materially affecting the quality;
(d) elongation ratio (ER) means the ratio of the length of cooked rice to that of uncooked rice which measures the expansion of length upon cooking;
(e) length- Breadth ratio means the ratio of the length of a grain to its breadth;
(f) red grains shall be the kernels, whole or broken which have 25 per cent. or more of their surface with red bran;
(g) under milled grain means grain whose bran portion is not completely removed during polishing or which has substantial bran streaks left on it;
(h) green grains mean the kernels whole or broken, which are greenish in colour;
(i) paddy grains mean the kernels whole or broken, with husk;
(j) average volume expansion ratio means ratio of volume of cooked rice to volume of raw rice;
(k) other varieties mean varieties of rice other than those notified as basmati.

(4) The type of broken rice, such as Tibar, Dubar, Mogra shall be prominently mentioned on the label.

27. **Blended Rice.** - Blended Rice is a mixture of basmati and/ or non-basmati rice which resemble with each-other as closely as possible in final attributes and shall be free from off odour. It shall be free from abnormal odours added colouring matter, molds, weevils, rodent hairs and excreta of animal origin.

(1) Every package of Blended Rice shall carry the following label, namely: -

BLENDED RICE contains
(Name and type) Rice..... percent.
(Name and type) Rice..... percent.

(2) Blended Rice shall confirm to the specifications of Rice prescribed at regulation 2.4.6(24) in its respective category.

(3) The product shall conform to the microbiological requirement given in Appendix B.]

[82][**28. Triticale**. - (1) Triticale is a hybrid of wheat and Rye, which shall be dried mature grains of xTriticosecale.

(2) The product shall be free from musty and stale odour or sourness and from lumps and also shall be free from fungus or insect infestation.

(3) It shall conform to the following requirements, namely: -

Sl. No.	Requirements	Limit
(1)	(2)	(3)
1.	Moisture, Not more than, % by mass	14.0
2.	Foreign matter (Extraneous matter)	Not more than 1 per cent. by mass of which not more than 0.25 per cent. by mass shall be mineral matter and not more than 0.10 per cent. by mass shall be impurities of animal origin.
3.	Other Edible grains, Not more than, % by mass	5.0
4.	Weevilled grains, Not more than, % by count	5
5.	Damaged grains, Not more than, % by mass	5.0
6.	Uric acid (Not more than), mg/kg	100

Note: The total of foreign matter, other edible grains and damaged grains shall not exceed 8.0 per cent by mass.]

[75]**[2.4.7 MAIZE STARCH. -** (1) Maize starch (or Corn starch) means the starch obtained from maize (*Zea mays L.).* It shall be odourless and white color free flowing powder. It shall contain no added colour, flavours or other chemicals. It shall also be

free from dirt, insects, larvae and impurities or other extraneous matter. It shall conform to the following standards, namely:-

S. No.	Parameter	Limit
(1)	Moisture (% by mass), Not more than	12.0
(2)	Total ash (% on dry basis), Not more than	0.50
(3)	Acid Insoluble ash (% on dry basis), Not more than	0.10
(4)	Alcoholic acidity (expressed as H2SO4) with 90 percent alcohol, percent by mass, Not more than	0.10
(5)	Starch content (% on dry basis), Not less than	98.0
(6)	pH	4.5-7.0
(7)	Sulphur Dioxide (ppm), Not more than	70.0
(8)	Uric Acid, mg/kg, Not more than	100]

2.4.8. CORN FLAKES:

[51][1. Corn flakes means the product obtained from dehulled, degermed and cook corn (*Zea mays* L.) by flaking, partially drying and toasting. It may contain any other permitted ingredients appropriate to the product whose standards are prescribed in these regulations. It shall be in the form of crisp flakes of reasonably uniform size and golden brown in colour. It shall be free from dirt, insects, larvae and impurities and any other extraneous matter.

The Corn flakes shall conform to the following standards, namely.-

Sl. No.	Parameter	Limit
(I)	Moisture (per cent. By mass), Max.	7.5
(II)	Total ash excluding salt (per cent. on	1

	dry mass basis), Max	
(III)	Ash insoluble in dilute HCl (per cent. on dry mass basis), Max	0.1
(IV)	Alcoholic acidity (with 90 per cent. alcohol)	Shall be equivalent to not more than 2.0 ml. N. NaOH per 100 g. of dried substance.]

2.4.9 CUSTARD POWDER:

1. CUSTARD POWDER means the product obtained from maize (Zea mays L.) or sago/topioca with or without the addition of small quantities of edible starches obtained from arrowroot, potato or jawar (sorghum vulgare) and with or without the addition of edible common salt, milk and albuminous matter. It may contain permitted colours and flavours. It shall be free from any other foreign matter. It shall be the form of fine powder, free from rancidity, fermented and musty odour. It shall conform to the following standards namely:—

Moisture	Not more than 12.5%
Total ash excluding added common salt (on dry basis)	Not more than 0.5 per cent
Ash insoluble in dilute HCl (on dry basis)	Not more than 0.1 percent

2.4.10 MACARONI PRODUCTS:

1. [26]**[PASTA PRODUCTS**: means the product obtained from one or a combination of ingredients including suji, maida, rice flour, groundnut flour, tapioca flour, edible soy flour or flour of any other cereal referred to in sub-regulation 2.4 by kneading the dough and extending it or by any other process. It may contain one or more of the following ingredients either singly or in combination:

milk powder, fruit and vegetables and products thereof or their extracts; edible common salt, nutritive sweeteners, meat and products thereof; fish and products thereof; eggs and products thereof; spices, condiments and herbs including their extracts; vitamins and minerals; edible fats and oils; yeast extract, yeast and product thereof; hydrolysed plant protein and soy sauce powder.

It may contain food additives specified in Appendix A appended to these regulations. It shall be free from dirt, insect's larvae and impurities or any other extraneous matter.

It shall conform to the following standards: -

Moisture	Not more than 12.5 per cent.
Ash insoluble in dilute HCl (on dry basis)	Not more than 0.1 per cent.]

[37][2. (1)The "Instant noodle (not applied to noodle seasoning)" means the product prepared from wheat flour or rice flour or flour of any other cereals, millets and legumes covered in sub-regulation 2.4 of these regulations or combination thereof or flour from tubers and water as the main ingredient, with or without the addition of herbs, condiments and seasoning, spices, iodised salt, sugar, wheat gluten by kneading the dough and extending it, and starches, *dried fruits and vegetables, or their products or extracts, nuts, edible protein and egg powder, meat, poultry, marine or their products* [whose standards are prescribed in these regulations] *may be added, if required*.

(2) Instant noodle is characterised by the use of pregelatinization process and dehydration either by frying in any oil or fat covered under sub-regulation 2.2 or by other methods, and the product shall be presented as Fried noodles or Non-fried noodles.

(3) The product shall be of good characteristic colour, appearance, texture, aroma and taste and shall be free from undesirable taste, dirt, insect's larvae and impurities or any other extraneous matter, which shall conform to the following standards, namely:-

S.No.	Parameter	Fried noodles	Non- fried noodles
(a)	Moisture (percent by mass), Max.	10.0	13.0
(b)	Acid insoluble ash (on dry matter basis), Max %	0.3	0.3
(c)	Acid Value, Max.	2.0	---

(4) The manufacturer shall label seasoning, if any, accompanying the instant noodles distinctly on the package.]

2.4.11 MALTED AND MALT BASED FOODS

1. **MALTED MILK FOOD** means the product obtained by mixing whole milk, partly skimmed milk or milk powder with the wort separately from a mash of ground barley malt, any other malted cereal grain and wheat flour or any other cereal flour or malt extract with or without addition of flavouring agents and spices, emulsifying agents, eggs, protein isolates, edible common salt, sodium or potassium bicarbonate, minerals and vitamins and without added sugar in such a manner as to secure complete hydrolysis of starchy material and prepared in a powder or granule or flake form by roller drying, spray drying, vacuum drying or by any other process. It may contain cocoa powder. It shall be free from dirt and other extraneous matter. It shall not contain any added starch (except starch natural to cocoa powder) and added non-milk fat. It shall not contain any preservative or added colour. Malted milk food containing cocoa powder may contain added sugar. Malted milk food shall also conform to the following standards, namely: —

		Malted milkfood without Cocoa powder	*Malted milkfood with cocoa powder*
(a)	Moisture	Not more than 5 per cent by weight.	Not more than 5 per cent by weight
(b)	Total protein (N x 6.25) (on dry basis)	Not less than 12.5 per cent by weight.	Not less than 11.25 per cent by weight.
(c)	Total fat (on Dry basis)	Not less than 7.5% by weight	Not less than 6% by weight.
(d)	Total ash (on dry basis)	Not more than 5% by weight	Not more than 5% by weight.
(e)	Acid insoluble ash	Not more than 0.1 per cent by weight	Not more than 0.1 per cent by weight
	(on dry basis) (in dilute HCl)		
(f)	Solubility	Not less than 85% by weight.	Not less than 80% by weight.
(g)	Cocoa powder (on dry basis) --		Not less than 5.0% by

			weight.
(h)	Test for starch	Negative	—
(i)	Bacterial count	Not more than 50,000 per gram.	Not more than 50,000 per gram.
(j)	Coliform count	Not more than 10 per gram.	Not more than 10 per gram.
(k)	Yeast and mould count		absent in 0.1 gm
(l)	Salmonella and Shigella		absent in 0.1 gm
(m)	E.Coli		absent in 0.1 gm
(n)	Vibrio cholera and V.Paraheamolyticus		absent in 0.1 gm
(o)	Faecal streptococci and Staphylococcus aureas		absent in 0.1 gm

2. **MALT BASED FOODS (MALT FOOD**) means the product obtained by mixing malt (wort or flour or malt extract) of any kind obtained by controlled germination of seeds (cereals and/or grain legumes), involving mainly steeping germination and kiln drying processes with other cereal and legume flour with or without whole milk or milk powder, flavouring agents, spices, emulsifying agents, eggs, egg powder, protein isolates, protein hydrolysates, edible common salt, liquid glucose, sodium or potassium bicarbonate minerals, amino acids and vitamins. It may contain added sugar and/or cocoa powder and processed in such a manner to secure partial or complete hydrolysis of starchy material in the form of powder or granules or flakes by drying or by dry mixing of the ingredients. The grains, legumes and their products used in preparation of malt shall be sound, uninfested and free from insect fragments, rat excreta, fungal infested grains or any other type of insect or fungal damage.

It shall also conform to the following standards, namely:—

(a)	Moisture	Not more than 5 per cent, by weight

(b)	Total Protein (N x 6.25) (on dry basis)	Not less than 7.0 per cent, by weight
(c)	Total ash (on dry basis)	Not more than 5 per cent, by weight
(d)	Acid insoluble ash (in dilute HCl)	Not more than 0.1 per cent, by weight
(e)	Total plate count	Not more than 50,000 per gram.
(f)	Coliform count	Not more than 10 per gram.
(g)	Yeast and Mould Count	Not more than 100 per gram.
(h)	E Coli	Absent in 10 gram.
(i)	Salmonella and Shigella	Absent in 25 gram
(j)	Alcoholic Acidity (expressed as H_2SO_4) with 90 per cent alcohol (on dry weight basis)	Not more than 0.30 per cent.
(k)	Vibrio cholera and V.Paraheamolyticus	absent in 0.1 gm
(l)	Faecal streptococci and Staphylococcus aureas	absent in 0.1 gm

[27][**3. MALT EXTRACT** means the product prepared by digesting with water, sound malted grains, of cereals (such as barley, wheat and millets) at a suitable temperature with or without adding enzymes. The water extract is then strained and evaporated into a viscous product. Malt or malt extract shall not be prepared from wheat gluten, corn grits, edible starches (such as potato or tapioca), unmalted whole grains and legume flours. It shall be a viscous liquid, amber or yellowish brown in colour and shall possess a characteristic odour and sweet taste. The material shall be free from any adulterants, off-odour, foreign flavour and impurities. It may contain wheat gluten, soya protein or any other external protein sources intended for use in the manufacture of malted milk food, malt based foods etc.

Malt Extract shall be of the following types:-

(i) Diastatic Malt Extract;
(ii) Non Diastatic Malt Extract; and
(iii) Brewery Grade Malt Extract.

It shall also conform to the following standards, namely:-

Characteristic	*Requirement*		
	Type 1	Type 2	Type 3
Density at 20^0 C Min	1.39	1.39	1.39
Refractive Index at 20^0 C, Min	1.489	1.489	1.489
Total solids (as is basis), % by weight, Min	77	77	55
Reducing sugar, on dry basis, (calculated as anhydrous maltose), % by weight,	55-65	55-65	55-65
Crude protein (on dry basis), % by weight, Min	3.5	3.5	2.5
Test for starch	Negative	Negative	Negative

2. Food Additives

Only those food additives permitted under the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 shall be used.

3. Hygiene

The product shall be prepared and handled in accordance with the guidelines provided in Schedule 4, Part-II of the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011 and such guidance as provided from time to time under the provisions of the Food Safety and Standards Act, 2006.

4. Contaminants, Toxins and Residues

The product covered in this standard shall comply with the Food Safety and Standards (Contaminants, toxins and Residues) Regulations, 2011.

The products covered in this standard shall conform to the Microbiological Requirements given in Appendix B of the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011.

5. Packaging and Labelling

The products shall comply with the packaging and labelling requirements specified under the Food Safety and Standards (Packaging and Labelling) Regulations, 2011]

[53][4. Formulated supplements for children**

(1) Scope: This standard specifies requirements of formulated supplements for children of age above 24 months till 36 months.

(2) Description: Formulated supplements for children shall be of appropriate nutritional quality to provide additional energy and nutrients to complement the family foods derived from the local produce by providing those nutrients that are either lacking or are present in insufficient quantities. These foods may be presented in any other age suitable food format.

(3) Suitable raw materials and ingredients:

(i) Basic raw materials and ingredients permitted to be used include:

(a) Cereals: All milled cereals suitable for human consumption processed in such a way as to reduce the fibre content, when necessary. Such cereals processed in a way to decrease, and, if possible to eliminate the anti-nutrients such as phytates, tannins and other phenolic materials, lectins, trypsins and chymo-trypsin inhibitors which can lower the protein quality and digestibility, amino acid bioavailability and mineral absorption shall be permitted. Appropriate enzymes for decreasing the fibre content and anti-nutrients may be used during such processing. Cereals as a source should mainly contain carbohydrates and significant quantity (8-12%) of protein.

(b) Legumes and pulses: Legumes and pulses such as chick peas, cow peas, lentils, peas, green gram, kidney beans, soya beans containing at least 20% protein on dry basis. Legumes and pulses provide lysine that is deficient in cereals but deficient in L-methionine which may be added.

Legumes and pulses must be appropriately processed to reduce, as much as possible, the anti-nutritional factors normally present such as phytates, lectins (haemagglutenins), trypsin and chemo-trypsin inhibitors. Soya when used must be ensured that it contains low levels of phytoerstrogens. [lectins may be reduced by moist heat treatment; trypsin inhibitor activity by heating to high temperature or prolonged boiling; phytates may be reduced enzymatically or by soaking; phytoestrogens by fermentation]. Field beans and faba beans shall not be used due to favism.

(c) Oil seed flours and oil seed protein products: Flours, protein concentrates and protein isolates of oil seeds with reduced anti-nutritional factors and undesirable toxic

substances such as trypsins and chymotrypsin inhibitors, gossypol and urease activity. The following oil seeds depending on local conditions and requirements may be used;

I. Soyabeans: dehulled flour, (full fat and defatted) protein concentrate, protein isolate
II. Ground nut: paste, protein isolate
III. Sesame seeds: whole ground and defatted flour
IV. Sunflower seed: defatted flour
V. Low erucic acid rape seed: full fat flour

Defatted oil seed flours and protein isolates, if produced and appropriately processed for human Consumption, can be used as a good source of protein (47-95%).

(d) Animal source foods: Animal source foods such as meat, fish, poultry and eggs and their primary processed products are nutrient dense and source of high quality protein and micronutrients. It may also contain protein concentrates derived from these sources.

(e) Fats and oils: Fats and oils may be added in adequate quantities for the purpose of increasing the energy density of the product. It shall not contain partially hydrogenated fats.

(f) Fruits and vegetables: Fruits and vegetables and their primary processed products as a good source of micronutrients, when technologically feasible.

(g) Milk and milk products: Foods such as milk and milk products are nutrient dense and source of high quality protein and micronutrients. It may also contain protein concentrates derived from these sources.

(ii) Other ingredients: Other ingredients including those listed below may be used to improve the nutritional quality,-

(a) Digestible carbohydrates to increase energy density of foods;

(b) Protein isolates, concentrates and hydrolysates;

(c) Probiotic ingredient(s) and prebiotc ingredient(s) as provided under schedule VII and schedule VIII, respectively, of the Food Safety and Standards (Health Supplements, Nutraceuticals, Food for Special Dietary Use, Food for Special Medical Purpose, Functional Food and Novel Food) Regulations, 2016 along with other requirements laid down under the said regulations;

(d) Algal and fungal oil as sources of Docosahexaenoic Acid (DHA) and Arachidonic Acid (ARA) from *Crypthecodinium cohnii, Morterella alpine*, *Schizochytrium sp.*, and *Ulkenia sp.* at the level of maximum 0.5 per cent Docosahexaenoic acid (DHA) of

total fatty acids and ratio of arachidonic acid (ARA): docosahexaenoic acid (DHA) as 1:1 minimum.

Provided that docosahexaenoic acid (DHA) content shall not be less than 0.2 per cent of total fatty acids, if a claim related to the addition of docosahexaenoic acid (DHA) is made.

(e) Carbohydrates such as sucrose, dextrose and dextrins or maltodextrin, maltose and lactose.

Provided that the energy from added sugar per 100 g of the product shall not exceed 10 per cent of energy of the product.

(f) Vitamins, minerals and other nutrients: Following vitamins, minerals and other nutrients may be added to improve the micronutrient level of the product at the level as shown in the table:-

1.	Vitamin A (as retinol), µg per 100 g	Not less than 120.0 Not more than 400.0
2.	Vitamin D (expressed as cholecalciferol or ergocalciferol), µg per 100 g	Not less than 3.0 Not more than 10.0
3.	Vitamin C, mg per 100 g	Not less than 12.0 Not more than 40.0
4.	Thiamine, µg per 100 g	Not less than 150.0 Not more than 500.0
5.	Riboflavin, µg per 100 g	Not less than 180.0 Not more than 600.0
6.	Niacin, mg per 100 g	Not less than 2.50 Not more than 8.0
7.	Pyridoxine, µg per 100 g	Not less than 270.0 Not more than 900.0
8.	Folic Acid, µg per 100 g[1]	Not less than 14.50 Not more than 48.0
9.	Pantothenic acid, mg per 100 g	Not less than 0.60 Not more than 2.0
10.	Vitamin B_{12}, µg per 100 g	Not less than 0.15 Not more than 0.50

11.	Choline, mg per 100 g	Not less than 32.0
12.	Vitamin K, µg per 100 g	Not less than 4.50 Not more than 15.0
13.	Biotin, µg per 100 g	Not less than 2.50 Not more than 8.0
14.	[81][Vitamin E (as alpha- tocopherols), mg per 100 g]	Not less than 1.50 Not more than 5.0
15.	Sodium, mg per 100 g	Not less than 90.0 Not more than 300
16.	Potassium, mg per 100 g	Not less than 270.0 Not more than 900.0
17.	Chloride, mg per 100 g	Not less than 240.0 Not more than 800.0
18.	Calcium, mg per 100 g	Not less than 180.0 Not more than 600.0
19.	Phosphorus, mg per 100 g	Not less than 135.0 Not more than 450.0
20.	Magnesium, mg per 100 g	Not less than 15.0 Not more than 50.0
21.	Iron, mg per 100 g	Not less than 2.50 Not more than 9.0
22.	Iodine, µg per 100 g	Not less than 27.0 Not more than 90.0
23.	Copper, µg per 100 g	Not less than 102.0 Not more than 340.0
24.	Zinc, mg per 100 g	Not less than 1.50 Not more than 5.0
25.	Manganese, mg per 100 g	Not less than 0.30 Not more than 1.20
26.	Selenium, µg per 100 g	Not less than 5.0 Not more than 17.0

27.	Inositol, g per litre*	Not more than 0.40
28.	Taurine, mg per 100 g	Not more than 60.0
29.	Essential amino acids, mg per litre*	Not less than 9.0

(* When prepared in accordance with instructions for use; [1]1 microgram DFE = 0.6 microgram folic acid.)

(g) Formulated supplements for children shall use the source compounds for vitamins, minerals and other nutrients from sub-regulation 2.1.19 related to 'Foods for Infant Nutrition' provided under these regulations.

(4) Essential requirements: -

(i) Energy density shall be at least 4 kilo calories per gram on dry basis;

[81][(ii) The Protein: Energy ratio shall not be more than 5 – 7.5 per cent. Protein Digestibility Corrected Amino Acid Score (PDCAAS) shall not be less than 90 per cent. of the WHO amino acid pattern for children from 2 to 5 years. In formulations with PDCAAS score of <90 per cent. the quantity of protein shall be adjusted, if required, to achieve the desired value. If, for any technical reasons, the PDCAAS digestibility of a protein cannot be determined, the protein quality may be calculated from the published data on essential amino acid patterns of dietary proteins and their digestibility.]

(iii) Moisture (per cent by weight): Max 8.0;
(iv) Fat (per cent by weight): Min 7.50;
(v) Total ash (per cent by weight): Max 7.50;
(vi) The product shall conform to the microbiological requirements of 'Follow up formula' given in Appendix B of the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011.

(5) Food additives: (i) The following food additives may be used in the preparation of formulated supplements for children in 100 g of the product ready for consumption prepared following Manufacturer's instruction, unless otherwise indicated.

(ii) Carry-over of food Additives into foods shall be in accordance with clause 3.1.1.(10) of the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011.

INS No.	Additive	Maximum level

Emulsifiers		
322	Lecithins	1500 mg
471	Mono- and diglycerides	500 mg Singly or in combination
472a	Acetic and fatty acid esters of glycerol	
472b	Lactic and fatty acid esters of glycerol	
472c	Citric and fatty acid esters of glycerol	
Acidity Regulators		
500 ii	Sodium hydrogen carbonate	
501 ii	Potassium hydrogen carbonate	
170 i	Calcium carbonate	
270	L(+) Lactic acid	
330	Citric acid	
260	Acetic acid	
261	Potassium acetates	
262 i	Sodium acetate	
263	Calcium acetate	
296	Malic acid (DL) – L(+)-form only	
325	Sodium lactate (solution) – L(+)-form only	
326	Potassium lactate (solution) – L(+)-form only	
327	Calcium lactate – L(+)-form only	
331i	Monosodium citrate	
331ii	Trisodium citrate	

332i	Monopotassium citrate	GMP
332ii	Tripotassium citrate	
333	Calcium citrate	
507	Hydrochloric acid	
524	Sodium hydroxide	
525	Potassium hydroxide	
526	Calcium hydroxide	
575	Glucono delta-lactone	
334	L(+)-Tartaric acid – L(+)form only	500 mg Singly or in combination Tartrates as residue in biscuits and rusks
335 i	Monosodium tartrate	
335 ii	Disodium tartrate	
336 i	Monopotassium tartrate –L(+)form only	
336 ii	Dipotassium tartrate – L(+)form only	
337	Potassium sodium L(+)tartrate L(+)form only	
338	Orthophosphoric acid	Only for pH adjustment 440 mg Singly or in combination as phosphorous
339 i	Monosodium orthophosphate	
339 ii	Disodium orthophosphate	
339 iii	Trisodium orthophosphate	
340 i	Monopotassium orthophosphate	
340 ii	Dipotassium orthophosphate	
340 iii	Tripotassium orthophosphate	
341 i	Monocalcium orthophosphate	

341 ii	Dicalcium orthophosphate	
341 iii	Tricalcium orthophosphate	
Antioxidants		
306	Mixed tocopherols concentrate	300 mg/kg fat or oil basis, Singly or in combination
307	Alpha-tocopherol	
304	L-Ascorbyl palmitate	200 mg/kg fat
300	L-Ascorbic acid	50 mg, expressed as ascorbic acid
301	Sodium ascorbate	
303	Potassium ascorbate	
302	Calcium ascorbate	20 mg, expressed as ascorbic acid
Raising Agents		
503 i	Ammonium carbonate	Limited by GMP
503 ii	Ammonium hydrogen carbonate	
500 i	Sodium carbonate	
500 ii	Sodium hydrogen carbonate	
Thickeners		
410	Carob bean gum	1000 mg singly or in combination 2000 mg in gluten-free cereal-based foods
412	Guar gum	
414	Gum arabic	
415	Xanthan gum	
440	Pectins (Amidated and Non- Amidated)	
1404	Oxidized starch	5000 mg

1410	Monostarch phosphate	Singly or in combination
1412	Distarch phosphate	
1413	Phosphateddistarch phosphate	
1414	Acetylated distarch phosphate	
1422	Acetylated distarchadipate	
1420	Starch acetate esterified with acetic anhydride	
1450	Starch sodium octenyl succinate	
1451	Acetylated oxidized starch	
Anticaking Agents		
551	Silicon dioxide (amorphous)	200 mg for dry cereals only
Packaging Gases		
290	Carbon dioxide	GMP
941	Nitrogen	GMP
Flavours		
	Natural fruit extracts	GMP
	Vanilla extract	GMP
	Ethyl vanillin	7 mg
	Vanillin	7mg

(6) The product and its components shall not have been treated by ionizing radiation.

(7) Contaminants, Toxins and Residues: (i) The product shall conform to the limits of contaminants as Specified in Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011.

(ii) The products shall be prepared with special care under good manufacturing practices, so that residues of those pesticides which may be required in the production, storage or processing of the raw materials or the finished food ingredients do not remain, or, if technically unavoidable, are reduced to the maximum extent possible.

(iii) The product shall be free from residues of hormones, antibiotics as determined by means of agreed methods of analysis and practically free from other contaminants, especially pharmacologically active substances.

(8) Food Hygiene: The product shall be prepared and handled in accordance with Schedule 4 of the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011.

(9) Packaging and Labelling:

(i) The food shall be packed in hermetically sealed, clean and sound containers or in flexible pack made from paper, polymer and/ or metallic film as per the Food Safety and Standards (Packaging and Labelling) Regulations, 2011 so as to protect the contents from deterioration. It shall be packed under inert atmosphere.

(ii) The product shall be labelled in accordance with the Food Safety and Standards (Packaging and Labelling) Regulations, 2011 and the specific labelling requirements provided in these regulations.

(iii) The name of the food to be declared on the label shall indicate that the food is a formulated supplement for children.

Provided that these products shall not be presented as ‘Energy food’ or ‘Health food’.

(iv) Label of this food shall not refer to malnourished children.

(v) The label should clearly indicate the major sources of protein and product is recommended for children age above 24 months till 36 months.

(vi) The label shall also declare information relating to allergen.

(vii) Instructions for use:

(a) Directions as to the preparation and use of the food shall be given; preferably accompanied by graphical presentations.

(b) In the case that addition of water is needed, the directions for the preparation shall include a precise statement that:

(i) where the food contains non-heat-processed basic ingredients, the food must be adequately boiled in a prescribed amount of water;

(ii) where the food contains heat-processed basic ingredients:

(a) the food requires boiling, or
(b) can be mixed with boiled water that has been cooled.

(iii) Formulated supplements for Children foods to which fats, sugars or other digestible carbohydrates shall be added during preparation, the instructions for use shall identify appropriate sources and indicate the amounts of the ingredients to be added. In such situations, fats and oils with an appropriate essential fatty acid ratio shall be recommended.

(iv) Directions for use shall include a statement that only an amount of food sufficient for one feeding occasion shall be prepared at one time. Foods not consumed during the feeding occasion shall be discarded, unless consumed within a period as recommended by the manufacturer under the instructions for use.

(v) The label shall also include a statement that 'formulated supplements for children are to be consumed to complement family foods and breast milk or breast milk substitutes'.

(10) Method of sampling and analysis: (i) Method of sampling and analysis shall be as per the Food Safety and Standards (Laboratory and Sample Analysis) Regulations, 2011 and manuals published by the Food Authority.

[76][(ii) A variation of minus 10.0 per cent from the declared value of the nutrients or nutritional
ingredients on the label shall be allowed and the nutrient levels shall not exceed maximum limits as specified in the composition tables.]

[76][2.4.12 OAT PRODUCTS. -

1. (A) Rolled Oats. - Rolled/Flaked Oats (Quick Cooking Oats) means the product made from sound hulled oats(*AvenaSativa*).It shall be free from added colours,

rancidity and flavoring agents. It shall be in form of flakes of uniform size having a light cream colour.

1. (B) Products containing oats. – (i) Means the product containing oats as the major ingredient including oat bran, oat flour, oat meal, oat-trim, kilned dehulled oats, Steel cut Oats, Oat flakes (various thickness, which may make them instant, quick cooking or whole oats) etc. These may be made by using various process such as kilning, drying, rolling, slitting, cutting, steel cutting, gritting, de-hulling, flaking, grinding etc.

(ii) It may contains edible common salt or salt substitutes, Dairy products and Analogues, natural and non-nutritive sweeteners, sugar and sugar products, honey, invert sugar, jaggery, dextrose, edible molasses, liquid glucose, fruits and vegetables and their products (including dried fruits and vegetables), cocoa and its products, Coconut and its products, egg and its products, gluten, nut and nut products, cereal, legumes, malt and malt extract, edible starches and edible flours, spices, condiments, herbs and their extracts, seasonings, vinegar, edible seeds, protein concentrates or isolates, enzymes, vitamins and minerals and other nutrients, edible fibres, maltodextrin and any other ingredients as specified in Food Safety and Standards Regulations.

(iii) The grains and other ingredients used in the processing of products containing oats shall be of good quality and shall possess a characteristic taste and odour and shall be free from rancid, musty, sour and other undesirable tastes and odors.

2. Rolled or Flaked Oats and Products containing oats shall be free from insects, rodent excreta and other such foreign matters and shall comply with the requirements given in the table below:

Parameter	**Rolled/Flaked Oats**	**Products containing oats**
Moisture % by mass,	Not more than 12.0	Not more than 12.0
Ash insoluble in dilute HCl (on dry mass basis).	Not more than 0.1 percent	Not more than 0.5 percent
Protein content (conversion factor 6.25) on dry mass basis	Not less than 10.0 per cent	---
Crude Fibre on dry mass basis	Not more than 2.0 percent	---

Alcoholic acidity (with 90 percent alcohol) expressed as H_2SO_4,	Not more than 0.18 percent	Not more than 0.18 percent
Uric Acid, mg/kg,	Not more than 100	Not more than 100

3. Food Additives

The product may contain food additives permitted in the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 in Appendix A under appropriate Food Category(s) and those listed in GMP Table as applicable. The product may also contain 'Other substances for use in food products' permitted under regulation 3.3 as per appropriate Food category of the same regulation.]

2.4.13 SOLVENT EXTRACTED FLOURS:

1. **SOLVENT EXTRACT SOYA FLOUR** means the product obtained from clean, sound healthy soyabeans by a process of cracking, dehulling, solvent extraction with food grade hexane and grinding. It shall be in the form of coarse or fine powder or grits, white to creamy white in colour of uniform composition and free from rancid and objectionable odour, extraneous matter, insects, fungus, rodent hair and excreta. It shall be free from any added colour and flavour. It shall conform to the following standards, namely: -

(a)	Moisture	Not more than 9.0 per cent by weight
(b)	Total ash	Not more than 7.2 per cent by weight on dry basis
(c)	Ash insoluble in dilute HCl	Not more than 0.4 per cent by weight on dry basis.
(d)	Protein (Nx6.25)	Not less than 48 per cent by weight on dry basis.
(e)	Crude fibre	Not more than 4.2 per cent by weight on dry basis.
(f)	Fat	Not more than 1.5 per cent by weight on dry basis

(g)	Total bacterial count	Not more than 50,000 per gm.
(h)	Coliform bacteria	Not more than 10 per gm.
(i)	Salmonella bacteria	Nil in 25 gm
(j)	Hexane (Food grade)	Not more than 10.00 ppm

2. **SOLVENT EXTRACTED GROUNDNUT FLOUR** means the product obtained from fresh, clean, degermed groundnut kernels which have been decuticled after mild roasting. The kernels shall be first expelled followed by solvent extraction with food grade hexane or by direct extraction of kernels. It shall be whitish to light brown in colour of uniform composition and shall be free from rancid and objectionable odour, extraneous matter, insect, fungus, rodent hair and excreta. It shall be free from added colour and flavour. It shall conform to the following standards namely :—

(a)	Moisture	Not more than 8.0 per cent by weight
(b)	Total ash	Not more than 5.0 per cent by weight on dry basis
(c)	Ash insoluble in dilute HCl	Not more than 0.38 per cent by weight on dry basis
(d)	Protein(Nx6.25)	Not less than 48 per cent by weight on dry basis.
(e)	Crude fibre	Not more than 5.0 per cent by weight on dry basis.
(f)	Fat	Not more than 1.5 per cent by weight on dry basis
(g)	Total bacterial	Not more than 50,000 per gm.count
(h)	Coliform bacteria	Not more than 10 per gm.
(i)	Salmonella bacteria	Nil in 25 gm
(j)	Hexane (Food grade)	Not more than 10.00 ppm

3. **SOLVENT EXTRACTED SESAME FLOUR** means the product obtained by pressing, clean, sound healthy and decuticled sesame seeds followed by solvent extraction with food grade hexane or by direct extraction of kernels. It

shall be in the form of flour of white or pale creamy white colour, of uniform composition and free from rancid and objectionable odour, extraneous matter, insects, fungus, rodent hair and excreta. It shall be free from added colour and flavour. It shall conform to the following standards, namely :—

(a)	Moisture	Not more than 9.0 per cent by Weight
(b)	Total ash	Not more than 6.0 per cent by weight on dry basis
(c)	Ash insoluble in dilute HCl	Not more than 0.15 per cent by weight on dry basis.
(d)	Protein (Nx6.25)	Not less than 47 per cent by weight on dry basis.
(e)	Crude fibre	Not more than 6.0 per cent by weight on dry basis.
(f)	Fat	Not more than 1.5 per cent by weight on dry basis
(g)	Total bacterial count	Not more than 50,000 per gm.
(h)	Coliform bacteria	Not more than 10 per gm.
(i)	Salmonella bacteria	Nil in 25 gm.
(j)	Oxalic Acid	Not more than 0.5 per cent by weight content on dry basis
(k)	Hexane (Food grade)	Not more than 10.00 ppm.

4. **SOLVENT EXTRACTED COCONUT FLOUR** means the product obtained from fresh coconut Kernels or dried coconut copra of good quality and free from mould. Food grade hexane shall be used for extraction of the oil. It shall be of white or pale brownish yellow colour of uniform composition and free from rancid and objectionable odour, extraneous matter, insects, fungus, rodent hair and excreta. It shall be free from added colour and flavour. It shall conform to the following standards, namely :—

(a)	Moisture	Not more than 9.0 per cent by weight
(b)	Total ash	Not more than 6.0 per cent by

		weight on dry basis
(c)	Ash insoluble in — dilute HCl	Not more than 0.35 per cent by weight on dry basis.
(d)	Protein (Nx6.25)	Not less than 22.0 per cent by weight on dry basis.
(e)	Crude fibre	Not more than 9.0 per cent by weight on dry basis.
(f)	Fat	Not more than 1.5 per cent by weight on dry basis
(g)	Total bacterial -	Not more than 50,000 per gm.count
(h)	Coliform bacteria	Not more than 10 per gm.
(i)	Salmonella bacteria	Nil in 25 gm.
(j)	Hexane (Food grade)	Not more than 10.00 ppm.

5. **SOLVENT EXTRACTED COTTON SEED FLOUR** means the product obtained by solvent extraction of oil with food grade hexane from oil cake immediately following the single pressing, from cotton seed of good quality which have been pre-cleaned and are free from infected or otherwise damage materials and extraneous matter. It shall be in the form of flour of white or pale brownish colour, of uniform composition and free from rancid and objectionable odour, extraneous matter, insect, fungus, rodent hair and excreta. It shall be free from added colours and flavours. It shall conform to the following standards, namely :—

(a)	Moisture	Not more than 8.0 per cent by weight
(b)	Total ash	Not more than 5.0 per cent by weight on dry basis
(c)	Ash insoluble in dilute HCl	Not more than 0.35 per cent by weight on dry basis.
(d)	Crude Protein (Nx6.25)	Not less than 47 per cent by weight on dry basis.
(e)	Available lysine	Not less than 3.6 g. per 100 g. of crude protein.
(f)	Crude fibre	Not more than 5.0 per cent by weight on dry basis.

(g)	Free gossypol	Not more than 0.06 per cent by weight on dry basis.
(h)	Total gossypol	Not more than 1.2 percent by weight on dry basis.
(i)	Fat	Not more than 1.5 per cent by weight on dry basis.
(j)	Total bacterial Count	Not more than 50,000 per gm.
(k)	Coliform bacteria	Not more than 10 per gm.
(l)	Salmonella bacteria	Nil in 25 gm.
(m)	Hexane (Food grade)	Not more than 10.00 ppm."

2.4.14 STARCHY FOODS:

1. **ARROWROOT** means the separated and purified starch from the rhizomes of the plants known as Maranta arundinacea or from Curcuma augustifolia.

[40][2. (1) "Tapioca Sago" means the product made from the starch obtained from roots of tapioca (Manihot esculenta crantz syn. Utilissima). Tapioca Sago shall be hard, clean, wholesome globules or pearls of uniform colour, shape and size having characteristic taste and flavour.

(2) Tapioca Sago shall be free from insect infestation, live and dead insects, dirt, extraneous matter, visible mould growth, and the product shall comply with the following standards, namely:—

Sl.No.	parameter	limit
1	Moisture (percent by mass), Max.	12.0
2	Total Ash (on dry matter basis), Max. percent	0.40
3	Acid insoluble ash (on dry matter basis), Max. percent	0.10
4	Starch (on dry basis), Min. percent	96.0
5	Protein (percent on dry matter basis), Max.	0.3
6	Crude fibre (percent on dry weight basis), Max.	0.20

7	pH of aqueous extract	4.5 to 7.0
8	Colour of gelatinized alkaline paste in the porcelain on the lovibond scale not deeper than	0.4R+1.5Y
9	Sulphur Dioxide content, Max.	100 ppm
10	Colouring matter	Absent

(2) This standard shall also apply to Palm Sago starch obtained from Sago Palm (Metroxylon sagu and M.rumphii).”]

2.4.15 BAKERY PRODUCTS:

[73]**[1. Biscuit.-** (1) Biscuit is a baked product leavened or non-leavened , coated or uncoated, center-filled partially or wholly such as but not limited to wafer biscuits, coated wafers, cookies, crackers, centre-filled biscuits, enrobed biscuits, sandwich biscuits, crème biscuit including fat free/ low fat or sugar free/ low sugar variants.

(2) Biscuit can be made from cereal and cereal products including millets/pulses/legumes and/ mixtures. It may also contain fats and oils, including fat emulsions etc. or mixture thereof, Baking powder , sugar and sugar products, edible common salt including salt substitutes, dairy products and analogues, nutritive and non-nutritive sweeteners, , honey, invert sugar, jaggery, dextrose, edible molasses, liquid glucose/glucose syrup (High Maltose/High fructose), fruits and vegetables and their products (including dried fruits and vegetables), cocoa and its products including chocolates, tea, coffee, chicory and their extracts, coconut and its products, eggs and egg products, gluten, nut and nut products, malt and malt products, milk and milk products, oilseeds and its products including oilseed flours, all edible starches and edible flours, spices, condiments, herbs and their extracts, seasonings, vinegar, edible seeds, protein concentrates/isolates, Yeast and its products including yeast extract, enzymes, nutrients like vitamins and minerals, edible fibres, maltodextrin, oligofructose, trehalose and any other ingredients as specified in Food safety and Standards Regulations.

(3) It shall conform to the following requirements, namely:-

TABLE

S. No.	Requirements	Limits
1	Ash insoluble in dilute HCl, % on dry mass basis, not more than	0.1
2	Acidity of extracted fat (as oleic acid), %, not more than	2.0

2. Bread and Bread-Type Products.-(1) Bread and bread type products such as rusks means the baked product prepared from a mixture of atta (whole wheat flour) and/or maida (refined wheat flour), water, salt, yeast or other fermentive medium or leavening medium. It includes the different varieties of breads, rusks etc.

(2) It may also contain dairy products and analogue, gluten, sweetening agents including honey (such as- sugar and sugar products, invert sugar, jaggery, dextrose, edible molasses, invert sugar, jaggery, liquid glucose/glucose syrup (High Maltose/High fructose), date syrup, malt products and their extracts, edible starches and flour, edible cereals, grains and pulses or their flour, products, semolina, edible seeds including oilseeds and their flour, edible bran, edible fibre rich ingredients or concentrates, trehalose (maximum 10%), coconut and coconut products, cocoa and products derived from cocoa, prebiotic, probiotic, egg and egg products, tea, coffee, chicory and their extract, protein concentrates and isolates, other minerals, nutrients, vitamins, vanaspati, margarine or refined edible oil of suitable type, Interesterified vegetable fat, or butter or ghee or their mixture or any other type of edible fat / oil, albumin, lime water, lysine, spices and condiments and their extracts, herbs, seasonings, fruit and fruit products, edible vegetable and vegetable Products, dry fruits, nuts and nut products , maltodextrin, oligofructose (maximum 15%) ,vinegar or any other ingredient as specified in Food Safety and Standards Regulations.

(3)It shall conform to the following requirements, namely:-

TABLE

S. No.	Requirements	Limits
1	Alcoholic acidity (with 90 percent alcohol) (for breads)	shall not be more than equivalent of 7.5 ml. 1N NaOH per 100 gram of dried substances
2	Acidity of extracted fat as oleic acid, % (for rusks), not more than	1.5
3	Ash insoluble in dilute HCl (% on dry mass basis), not more than	0.2

(4) It shall be free from dirt, insect and insect fragments, larvae, rodent hairs.]

[27][2.4.16 EXPELLER PRESSED FLOUR

2. **Expeller Pressed Edible Groundnut Flour** means the product obtained by expeller pressing fresh, clean degermed groundnut kernels which have been decuticled after mild roasting. The kernels shall be sorted and selected either by visual inspection, inspection under ultraviolet light, electronic sorting or by other means. The kernels shall be free from insect or fungal infestation. Expeller pressed edible groundnut flour shall be whitish to light brown in colour, uniform in composition and shall be free from insect or fungal infestation, objectionable odour and rancid taste. It shall not contain added flavouring and colouring agent or any other extraneous matter. It shall be free from castor husk or MAHUA oilcake. It shall be manufactured, packed, stored and distributed under hygienic conditions. It shall conform to the following standards, namely:-

Moisture	Not more than 9.0 per cent. by weight.
Total ash	Not more than 4.5 per cent. by weight on dry basis.
Ash insoluble in dilute HCI	Not more than 0.35 per cent. by weight on dry basis.
Protein (Nx6.25)	Not less than 45 per cent. by weight on dry basis.
Crude fibre	Not more than 5.0 per cent. by weight on dry basis.
Fat	Not more than 9.0 per cent. by weight on dry basis.
Acid value of extracted fat	Not more than 4.0 per cent.

2. Food Additives

Only those food additives permitted under the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 shall be used.

3. Hygiene

The product shall be prepared and handled in accordance with the guideline provided in Schedule 4, Part-II of the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulation, 2011 and such guidance as provided from time to time under the provisions of the Food Safety and Standards Act, 2006.

4. Contaminants, Toxins and Residues

The product covered in this standard shall comply with the Food Safety and Standards (Contaminants, toxins and Residues) Regulations, 2011.

The products covered in this standard shall conform to the Microbiological Requirements given in Appendix B of the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011.

5. Packaging and Labelling

The products shall comply with the packaging and labelling requirements specified under the Food Safety and Standards (Packaging and Labelling) Regulations, 2011.]

[73]**[2.4.17 Bajra Flour (Pearl Millet Flour).-**(1)— "Bajra flour (pearl millet flour)" means the product obtained from pearl millet grains (*Pennisetum americanum* L., *Pennisetum typhyoideum, Pennisetum glaucum***)** through a process of milling.
(2) It shall be free from abnormal flavours, odours, living insects, filth (impurities of animal origin including dead insects).
(3) It shall conform to the following requirements, namely:-

TABLE

S. No.	Requirements	Limits
1	Moisture (% by mass), not more than	13.0
2	Acid Insoluble Ash, % on dry mass basis, not more than	0.15
3	Protein (N×6.25)(percent on dry mass basis), not less than	8.0
4	Fat (% on dry mass basis), not more than	7.0
5	Crude Fibre (percent on dry mass basis), not more than	2.5
6	Alcoholic acidity (with 90 per cent. alcohol) expressed as H_2SO_4, % on dry mass basis, not more than	0.25
7	*Particle Size	shall pass through 1mm sieve (18 mesh)
8	Uric acid (not more than), mg/kg	100

* The parameter 'Particle size' will not be applicable for intermediate products which are not meant for direct consumption.]

[73]**[2.4.18 Jowar Flour (Sorghum Flour). -(**1) Jowar Flour (Sorghum Flour) means the product obtained from grains of *Sorghum bicolor* (L.) moench through a process of milling.

(2) It shall be free from abnormal flavours, odours, living insects, filth (impurities of animal origin including dead insects).

(3) It shall conform to the following requirements, namely: -

TABLE

S. No.	Requirements	Limits
1	Moisture (% by mass), not more than	12.0
2	Acid Insoluble Ash, % by mass (on dry basis), not more than	0.15
3	Protein (N×6.25), % on dry mass basis, not less than	8.5
4	Crude fat, % on dry mass basis, not more than	4.7
5	Alcoholic acidity (with 90 percent alcohol) expressed as H_2SO_4, % on dry mass basis, not more than	0.18
6	Particle size*	Minimum 80 per cent shall pass through a 1 mm sieve (18 mesh)
7	Uric acid (Not more than), mg/kg	100

*The parameter 'Particle size' will not be applicable for intermediate products which are not meant for direct consumption.]

[48]**[2.4.19. Soybean**

(1) Soybean shall be obtained from the plants of *Glycine max* (L.) Merr., which shall be mature, clean and dried seeds free from mould and musty odour and shall also be free from non-edible and toxic seeds.

(2) The product shall conform to the following standards, namely:-

Parameters	Limits
Moisture (per cent. by mass), Maximum	12.0
Extraneous Matter	Not more than 1.0 per cent by weight of which not more than 0.25 per. cent by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
Organic per cent. (Maximum percentage)	
Inorganic (Maximum percentage)	
Other edible grains (per cent. by mass), Maximum	1.0
Immature, Shriveled and green seeds (per cent. by mass), Maximum	6.0
Weevilled Seeds by count (no. of grains/100g) (Maximum percentage)	2
Damaged or split or cracked seed (per. cent by mass), Maximum	4.0
Oil content (per. cent on dry basis),Minimum percentage	13.0
Acid Value of extracted oil (Maximum)	2.5
Uric acid (mg per kg), Maximum	100

(3) Food additives

The product may contain food additives permitted in Appendix A.

(4) Contaminants, toxins and residues

The product covered in this standard shall comply with the Food Safety and Standards (Contaminants, toxins and Residues) Regulations, 2011.

(5) Food hygiene

(a) The product shall be prepared and handled in accordance with the guidance provided in Schedule 4 to the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011 and any other such guidance provided from time to time under the provisions of the Food Safety and Standards Act, 2006(34 of 2006).

(b) The product shall conform to the microbiological requirement given in Appendix B.

(6) Packaging and labelling

The product covered by this standard shall be labelled in accordance with the Food Safety and Standards (Packaging and Labelling) Regulations, 2011.

(7) Method of Analysis

As provided in the relevant Food Safety and Standards Authority of India Manual on Analysis of Food.

2.4.20. Soy Protein Products

(1) Soy Protein Products (SPP) means the food products obtained by the reduction or removal from soybeans of the major non-protein constituents (water, oil, carbohydrates), which shall be clean, sound, mature and dry seeds. The Soy Protein Products so obtained shall be of following three types, namely:-

(a) Soy Protein Flour (SPF);
(b) Soy Protein Concentrate (SPC); and
(c) Soy Protein Isolate (SPI).

Optional Ingredients (which are standardised in various regulations under Food Safety and Standards Act, 2006(34 of 2006):-

(a) Carbohydrates, including sugars;
(b) Edible fats and oils;
(c) Other protein products;
(d) Vitamins and minerals;
(e) Salt; and
(f) Herbs and spices.

(2) The product shall conform to the following standards, namely:-

Parameters:	Limits

	SPF	SPC	SPI
Moisture (per cent. by mass), Maximum	10.0	10.0	10.0
Crude Protein (per cent. on dry mass basis)*	more than 50.0 and less than 65.0	more than 65.0 and less than 90.0	More than 90.0
Total Ash (per cent. on dry mass basis), Maximum	8.0	8.0	8.0
Crude Fibre (per cent. on dry mass basis), Maximum	5.0	6.0	0.50

Note:- * The protein content is calculated on dry mass basis excluding added vitamins, mineral, amino acids and food additives.

(3) Food additives

The product may contain Food Additives permitted in Appendix A.

(4) Contaminants, toxins and residues

The product covered in this standard shall comply with the Food Safety and Standards (Contaminants, toxins and Residues) Regulations, 2011.

(5) Food hygiene

(a) The product shall be prepared and handled in accordance with the guidance provided in Schedule 4 to the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011 and any other such guidance provided from time to time under the provisions of the Food Safety and Standards Act, 2006(34 of 2006).

(b) The product shall conform to the microbiological requirement given in Appendix B.

(6) Packaging and labelling

The product covered by this standard shall be labelled in accordance with the Food Safety and Standards (Packaging and Labelling) Regulations, 2011.

(7) Method of analysis

As provided in the relevant Food Safety and Standards Authority of India Manual on Analysis of Food.

2.4.21. Whole Maize (Corn) Flour

(1) Whole Maize (Corn) Flour is prepared from fully mature, sound, ungerminated, whole kernels of maize, *Zea mays* L., by a grinding process in which the entire grain is comminuted to a suitable degree of fineness and in the said preparation, coarse particles of the ground maize kernel may be separated, reground and recombined with all of the material from which they were separated.

(2) The product shall be free from abnormal flavours, odours, living insects and filth (impurities of animal origin, including dead insects).

(3) The product shall conform to the following standards, namely:-

Parameters	Limits
Moisture (per cent. by mass), Maximum	13.0
Ash (per cent. on dry mass basis), Maximum	3.0
Protein (NX6.25) (per cent. on dry mass basis), Minimum	8.0
Crude Fat (per cent. on dry mass basis), Minimum	3.1
Particle size	95 per cent. or more of the whole maize flour shall pass through a 1.19 mm sieve (16 mesh)

(4) Food additives

The product may contain food additives permitted in Appendix A.

(5) Contaminants, toxins and residues

The product covered in this standard shall comply with the Food Safety and Standards (Contaminants, toxins and Residues) Regulations, 2011.

(6) Food hygiene

(a) The product shall be prepared and handled in accordance with the guidance provided in Schedule 4 to the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011 and any other such guidance provided from

time to time under the provisions of the Food Safety and Standards Act, 2006(34 of 2006).

(b) The product shall conform to the microbiological requirement given in Appendix B.

(7) Packaging and labelling

The product covered by this standard shall be labelled in accordance with the Food Safety and Standards (Packaging and Labelling) Regulations, 2011.

(8) Method of analysis

As provided in the relevant Food Safety and Standards Authority of India Manual on Analysis of Food.

2.4.22. Wheat Protein Products including Wheat Gluten

(1) Wheat Protein Products (WPP) are produced from wheat or wheat flour by separation of certain non-protein constituents such as starch and other carbohydrates, and-

(a) vital wheat gluten is characterized by its property of high viscoelasticity as hydrated;

(b) devitalized wheat gluten is characterized by its reduced property of viscoelasticity as hydrated due to denaturation; and

(c) solubilized wheat proteins are characterized by their reduced property of viscoelasticity as hydrated due to partial hydrolysis of wheat gluten.

(2) The optional ingredients for solubilised wheat proteins are carbohydrates, including sugars, edible fats and oils, other protein products, amino acids, vitamins and minerals, salt, herbs and spices and enzymes may also be added.

(3) The product shall conform to the following standards, namely:-

Parameters	Limits
Moisture (per. cent by mass), Maximum	10.0
Crude Protein (N 6.25) (per cent. on dry mass basis), Minimum	80.0

(I) Vital and devitalized wheat gluten (II) Solubilized wheat proteins	60.0
Total Ash (per cent. on dry mass basis), Maximum	2.0
(I) Vital and devitalized wheat gluten (II) Solubilized wheat proteins	10.0

(4) Food additives

The product may contain food additives permitted in Appendix A.

(5) Contaminants, toxins and residues

The product covered in this standard shall comply with the Food Safety and Standards (Contaminants, toxins and Residues) Regulations, 2011.

(6) Food hygiene

(a) The product shall be prepared and handled in accordance with the guidance provided in Schedule 4 to the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011 and any other such guidance provided from time to time under the provisions of the Food Safety and Standards Act, 2006(34 of 2006).

(b) The product shall conform to the microbiological requirement given in Appendix B.

(7) Packaging and labelling

The product covered by this standard shall be labelled in accordance with the Food Safety and Standards (Packaging and Labelling) Regulations, 2011.

(8) Method of analysis

As provided in the relevant Food Safety and Standards Authority of India Manual on Analysis of Food.

2.4.23. Durum Wheat Semolina and Whole durum wheat semolina

(1) Durum wheat semolina is the product prepared from grain of durum wheat (*Triticum durum* Desf.) by grinding or milling processes in which the bran and germ are essentially removed and the remainder is comminuted to a suitable degree of fineness.

(2) Whole durum wheat semolina is prepared by a similar comminuting process, but the bran and part of the germ are retained.

(3) The product shall conform to the following standards, namely: -

Parameters	Limits	
	Durum Wheat Semolina	Whole Durum Wheat Semolina
Moisture (per cent. by mass), Maximum	12.0	12.0
Total Ash (per cent. on dry basis), Maximum	1.3	2.1
Acid insoluble ash (per cent. on dry basis), Maximum	0.1	0.1
Protein (N x 5.7) (per cent. on dry matter basis), Minimum	10.5	11.5
Alcoholic Acidity (with 90 per cent. alcohol expressed as H_2SO_4) (Maximum percentage)	0.18	0.18
Particle size	Maximum 80 per cent. shall pass through a 500 micron silk guaze or man made textile sieve	Maximum 80 per cent. shall pass through a 500 micron silk guaze or man made textile sieve -
Uric acid (mg per kg), Maximum	100	100

(4) Food additives

The product may contain food additives permitted in Appendix A.

(5) Contaminants, toxins and residues

The product covered in this standard shall comply with the Food Safety and Standards (Contaminants, toxins and Residues) Regulations, 2011.

(6) Food hygiene

(a) The product shall be prepared and handled in accordance with the guidance provided in Schedule 4 to the Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011 and any other such

guidance provided from time to time under the provisions of the Food Safety and Standards Act, 2006(34 of 2006).

(b) The product shall conform to the microbiological requirement given in Appendix B.

(7) Packaging and labelling

The product covered by this standard shall be labelled in accordance with the Food Safety and Standards (Packaging and Labelling) Regulations, 2011.

(8) Method of analysis

As provided in the relevant Food Safety and Standards Authority of India Manual on Analysis of Food.**]**

[51][**2.4.24. Degermed Maize (Corn) Meal and Maize (Corn) Grits**: (1) Degermed maize (corn) meal are prepared from fully mature, cleaned, free from mould degermed kernels of maize (corn), *Zea mays* L., by a grinding process in which the grain is comminuted to a suitable degree of fineness and from which bran and germ are removed. In its preparation, coarse particles of the ground maize kernel may be separated, reground and recombined with all of the material from which they were separated.

(2) Degermed maize (corn) grits are prepared from fully mature, cleaned, free from mould, kernels of maize (corn), *Zea mays* L., by a grinding process in which the grain is comminuted to a suitable degree of fineness and from which bran and germ are almost completely removed.

(3) Degermed Maize (Corn) Meal and Maize (Corn) Grits shall be free from abnormal flavours, odours, living insects and filth (impurities of animal origin, including dead insects).

(4) The Degermed Maize (Corn) Meal and Maize (Corn) Grits shall conform to the following standards:

Sl. No.	Parameter	Limit
(I)	Moisture (per cent. by mass), Max.	14
(II)	Ash (on dry matter basis), Max per cent.	1
(III)	Protein (Nx6.25) (on dry matter basis), Min	7

	per cent.	
(IV)	Crude Fat (on dry matter basis), Max per cent.	2.25
(V)	Particle size (i) degermed maize meal	95 per cent. or more shall pass through a 0.85 mm sieve (20 mesh); -and- 45 per cent. or more shall pass through a 0.71 mm sieve (25 mesh); -and- 25 per cent. or less shall pass through a 0.210 mm sieve (70 mesh)
	(ii) degermed maize grits	95 per cent. or more shall pass through a 2.00 mm sieve (10 mesh); -and- 20 per cent. or less through a 0.71 mm sieve (25 mesh),

Note: The parameter 'Particle size' will not be applicable for intermediate products not for direct consumption.

2.4.25.(1) Couscous is obtained from durum wheat semolina *(Triticum durum)* the elements of which are bound by adding potable water and which has undergone physical treatment such as cooking and drying.

(2) Couscous may be prepared from a mixture of coarse and fine semolina and it can also be prepared from "coarse medium" semolina which shall be clean and safe.

(3) Semolina proportions in the mixture intended for the preparation of couscous are:

(I) 20–30per cent. for fine semolina;
(II) 70–80per cent. for coarse semolina.

(4) "Coarse medium" semolina obtained from a mixture of:

(I) 25–30per cent. for coarse semolina;

(II) 70–75per cent. for medium semolina.

(5) The Couscous shall conform to the following standards:

Sl. No.	Parameter	Limit
(I)	Moisture (per cent. by mass), Max.	13
(II)	Ash (on dry matter basis), Max per cent.	1.1
(III)	Granularity (microns)	min. 600(0.60 mm= 30 mesh) microns to max. 2000 microns (2.0 mm= 10 mesh), with a tolerance of 6 per cent.

2.4.26. (1) Tempe is a compact, white, cake-form product, prepared from dehulled boiled soybeans through solid state fermentation with *Rhizopus* spp.

(2) Product covered by this standard shall consist of the following ingredients:

(I) Soybean (any variety);
(II) Mould of *Rhizopus* Spp. (*R.oligosporus, R. oryzae* and/ or *R. stolonifer*) mix with Cooked rice powder, rice bran powder and/ or wheat bran powder as an inocula.

It shall conform to the following standards, namely: -

S.No.	Parameter	Limit
(I)	Moisture (per cent. by mass), Max.	65
(II)	Protein Content (on dry matter basis), Min per cent.	15
(III)	Fat Content (per cent. on dry mass basis), Min.	7
(IV)	Crude Fibre (per cent. on dry mass basis) Max	2.5
(V)	Urease Index Value	0.05-0.2 pH Units rise

2.4.27. Textured Soy Protein (Soy Bari or Soy Chunks or Soy Granules) is obtained by extrusion of defatted soy flour or grits.

Textured Soy Protein shall conform to the following standards, namely:-

S.No.	Parameter	Limits
(I)	Moisture (per cent. by mass), Max.	7
(II)	Protein (N x 6.25) (per cent. on dry matter basis), Min.	50
(III)	Fat (per cent. not more than) on dry mass basis	1
(IV)	Total Ash (per cent. on dry mass basis), Max.	8
(V)	Crude Fiber (per cent. on dry mass basis) Max.	3.5
(VI)	Acid Insoluble Ash (per cent. on dry mass basis), Max.	0.3
(VII)	Hexane, Max.	10 ppm
(VIII)	Urease Index Value	0.05-0.2 pH Units rise

2.4.28. Sago flour is the product prepared from the pith or soft core of sago palm tree (*Metroxylon sp*.) or the Sago of Tapioca (*Manihot utilissima*). The product shall be free from off-flavours and odours. It must be free from filth (impurities of animal origin including insects) and other extraneous matters. Colour shall be white to light-brown.

Sago flour shall conform to the following standards, namely:-

S.No.	Parameter	Limit
(I)	Moisture (Not more than), per cent. by mass	13
(II)	Ash Inorganic extraneous matter (Not more than), per cent. by mass	0.5

(III)	Acidity (mg KOH/100g) (Not more than), per cent. by mass	220
(IV)	Starch content (Not less than), per cent. by mass	96
(V)	Crude fibre (Not more than) , per cent. by mass	0.2
(VI)	Particle size	Not less than 95 per cent. flour shall pass through a 100 mesh sieve.]

[64][**2.4.29. Wheat bran**. - Wheat bran is the outer layer of the grain. It consists of the combined pericarp and aleurone. It may have adhering endosperm of the wheat kernel. It shall be free from musty and stale odour or sourness and from lumps, dirt and extraneous matter including metallic pieces. It shall be free from fungus or insect infestation. It shall be light brown in colour.

It shall conform to the following standards:

Parameter	Limits
Moisture, % by mass, Not more than	12.5
Crude Protein on dry basis (N*6.25), % by mass, Not less than	9.0
Crude Fibre, % by weight, Not more than	12.0
Acid Insoluble Ash on dry basis, % by mass. Not more than	0.25
Acid value , Not more than	6

2.4.30. Non- fermented soybean products.-

1. Non – fermented soybean products are the products, the main ingredients of which are the soybean or soy derivatives or both, (e.g. soybean flour, soybean concentrates, soybean isolates or defatted soya) and water and are produced without fermentation

process. It shall have the characteristic flavour, color and texture of the product without any visible foreign matters in the products.

(1). **Soybean Beverages and Related Products:**

(a) **Plain soybean beverage**: Plain soybean beverage is the milky liquid, prepared from soybeans by eluting protein and other components in hot/cold water or other physical means, without adding optional ingredients. Fibres can be removed from the products.

(b) **Composite or mixed or flavoured soybean beverages**: Composite or mixed or flavoured soybean beverages are the milky liquid, prepared by adding optional ingredients to plain soybean beverages. It includes products such as sweetened soybean beverages, spiced soybean beverages, salted soybean beverages.

(c) **Soybean** - based beverages: Soybean - based beverages are the milky liquid products prepared by adding optional ingredients to soybean beverages, with lower protein content than composite/flavoured soybean beverages.

(2). **Soybean Curd and Related Products**:

(a) **Semisolid soybean curd**: Semi solid soybean curd is the semisolid product in which soybean protein is coagulated by adding coagulant into the soybean liquid. It may be coagulated using magnesium chloride (nigari), calcium sulfate, calcium chloride, citric acid, acetic acid, magnesium sulfate and glucono -δ- lactone.

(b) **Soybean curd**: Soybean curd is the solid product with higher water content, and is made from soybean liquid and coagulated by adding coagulant. It may be coagulated using magnesium chloride (nigari), calcium sulfate, calcium chloride, citric acid, acetic acid, magnesium sulfate and glucono -δ- lactone.

(3). **Compressed Soybean Curd**.- Compressed soybean curd is partially dehydrated soybean curd, of which the water content is much lower than Soybean curd and has a chewy texture.

(4). **Dehydrated Soybean Curd Film**.- Dehydrated soybean curd film is obtained from the uncovered still surface of soybean liquid preparation, with or without folding up, which will be dehydrated. It may be dipped in salt solution prior to dehydration.

(5). **Tofu**.- (a) Tofu is made by coagulating milky liquid obtained from soybean, and then pressing into soft white blocks. The milky liquid may be coagulated using magnesium chloride (nigari), calcium sulfate, calcium chloride, citric acid, acetic acid, magnesium sulfate and glucono -δ- lactone, reagents either in combination or individually. The product may contain spices or herbs whose standards are prescribed in sub – regulation 2.9 of Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011.

(b) It shall conform to the following standards:

Parameters	Limits
Moisture (% by mass), Max.	76.0
Total Ash (% by mass), Range	0.3-2.0
Protein (on dry basis) % by mass, Min.	8.0
Fat (% by mass), Range	2.0-5.0
Crude fiber (on dry basis) % by mass, Range	0.5-6.0
Titrable acidity Max. (as LACTIC ACID) %	1.5
Urease Index Value	0.05-0.2 pH Units Rise

2. Permitted ingredients for products covered under sub-clause (1) to (4):

(a) Basic Ingredients:

(i) Soybean or soy derivatives, or both,
(ii) Water

(b) Optional ingredients:

(i) Edible oil
(ii) Sugars
(iii) Edible Salts
(iv) Spices, seasoning and condiments
(v) Other ingredients as appropriate

All the above mentioned ingredients shall conform to their respective standards as provided under these regulations.

3. Products covered under sub-clause (1) to (4) shall conform to the following standards:

Parameter	Requirements						
	Soybean Beverages and Related Products			Soybean Curd and Related Products		Compressed Soybean Curd	Dehydrated Soybean Curd Film
	Plain soybean beverage	Composite/ Mixed/flavoured soybean beverages	Soybean - based beverages	Semisolid soybean curd	Soybean curd		
Moisture, g/100g	-	-	-	Not less than 92.0	Not more than or equal to 92.0	Not more than or equal to 75.0	Not more than or equal to 20.0
Protein, g/100g	Not less than or equal to 2.0	Not less than or equal to 2.0	Not less than or equal to 0.8 but not more than 2.0	Not less than or equal to 2.5	Not less than or equal to 3.5	Not less than or equal to 13.0	Not less than or equal to 30.0
Urease Index Value	0.05-0.2 pH Units Rise	0.05-0.2 pH Units Rise	0.05-0.2 pH Units Rise	0.05-0.2 pH Units Rise	0.05-0.2 pH Units Rise	0.05-0.2 pH Units Rise	0.05-0.2 pH Units Rise.]

[66][**2.4.31. Cassava or Tapioca product (Gari)** .- (1) Cassava orTapioca product (Gari) is the finished product obtained by artisanal or industrial processing of cassava tubers (*Manihot esculenta Crantz*).

(2) The processing consists of peeling, washing and grating of the tubers, followed by fermentation, pressing, fragmentation, granulation, drying if necessary, sifting and suitable heat treatment.

(3) The product is presented as flour of variable granule size and shall be free from abnormal flavours, odours, and living insects.

(4) It shall conform to the following standards, namely:-

S.No.	Requirements	Limits
(i)	Moisture, per cent. by mass (Not more than)	12.0
(ii)	Extraneous matter	Not more than 1 per cent. by mass of which not (Extraneous matter) more than 0.25 per cent. by mass shall be mineral matter and not more than 0.10 per cent. by mass shall be impurities of animal origin
(iii)	TOTAL ACIDITY, per cent. determined as lactic acid (Range)	0.6 – 1.0
(iv)	Crude fiber per cent. (Not more than)	2.0
(v)	Total Ash, per cent. (Not more than)	2.75
(vi)	Acid insoluble ash in dilute HCl (per cent. on dry mass basis), not more than	0.5
(vii)	Extra-fine Cassava or Tapioca product (Gari)	minimum 100 per cent. by mass shall pass through a 0.50 mm sieve and minimum 40per cent. by mass shall pass through a 0.25 mm sieve
(viii)	Fine Cassava or Tapioca product (Gari)	minimum 100per cent. by mass shall pass through a 1 mm sieve and maximum 40per cent. by mass shall pass through a 0.5 mm sieve

(ix)	Medium Cassava or Tapioca product (Gari)	minimum 100per cent. by mass shall pass through a 1.25 mm sieve and maximum 40per cent. by mass shall pass through 1.00 mm sieve
(x)	Coarse Cassava or Tapioca product (Gari)	minimum 100per cent. by mass shall pass through a 2 mm sieve and maximum 40 per cent. by mass shall pass through a 1.25 mm sieve

2.4.32. Edible Cassava or Tapioca Flour-(1) Edible cassava or Tapioca (*Manihot esculenta Crantz*) flour is the product prepared from dried cassava chips or paste by a pounding, grinding or milling process, followed by sifting to separate the fibre from the flour.

(2) In case of edible cassava or tapioca flour prepared from bitter cassava (*Manihot utilissima Pohl*), detoxification is carried out by soaking the tubers in water for a few days, before they undergo drying in the form of whole, pounded tuber (paste) or in small pieces.

(3) It shall conform to the following standards, namely:-

S.No.	Requirements	Limits
(i)	Moisture, per cent. by mass (Not more than)	13.0
(ii)	Crude fiber, per cent. (Not more than)	2.0
(iii)	Total Ash, per cent(Not more than)	3.0
(iv)	Acid insoluble ash in dilute HCL (per cent. on dry weight basis), not more than	0.5

(v)	PARTICLE SIZE Fine flour Coarse flour	 minimum 90 per cent. shall pass through a 0.60 mm sieve minimum 90 per cent. shall pass through a 1.20 mm sieve

2.4.33. Roasted Bengal Gram Flour (Chana Sattu)- (1) *Sattu* shall be obtained from clean, washed, dried and sound grains of gram (*Cicer arietinum*) after grinding of roasted form.

(2) It shall be of uniform color, having characteristic taste, smell and flavour associated with the product and shall be free from insect infestation, live and dead insects, insect fragments, mould or mites, and larvae; free from rodent hair and excreta; fermented and musty odour, or any objectionable odour.

(3) It shall also be free from extraneous matter or any other adulterant and fungal contamination.

(4) It shall conform to the following standards, namely:-

S.No.	Requirements	Limits
(i)	Moisture, per cent. by mass, not more than	8.0
(ii)	Acid insoluble ash (dry basis), per cent. by mass, not more than	0.5
(iii)	Alcoholic acidity, per cent. by mass, not more than	0.15
(iv)	Crude fibre (on dry basis), per cent. by mass, not more than	3.0
(v)	Crude protein (Nx6.25), per cent. by mass(on dry basis), not less than	20.0

(vi)	Particle size*	100 per cent. pass through 35 mesh sieve.
(vii)	Uric acid (mg per kg), not more than	100

* Note: - The parameter "Particle size" shall not be applicable for intermediate products which are not meant for direct consumption.

2.4.34. Ragi Flour.- (1)Ragi flour is the product obtained from dried mature grains of *Eleusinecoracana L. Gaertn.* through a process of milling, which shall be free from added colouring matter, flavouring substances, moulds, weevils, obnoxious substances, discolouration, and all other impurities except to the extent indicated below and shall also be free from rodent hair and excreta.

(2) It shall conform to the following standards, namely:-

S.No.	Requirements	Limits
(i)	Moisture, per cent. by mass, not more than	10.0
(ii)	Crude fiber, per cent. by dry mass basis, not more than	4.5
(iii)	Crude protein, per cent. on dry mass basis (NX6.25), not less than	7.0
(iv)	Acid insoluble ash, per cent. on dry mass basis, not more than	0.15
(v)	Particle Size, per cent.	Shall pass through a 1mm sieve (18 mesh)
(vi)	Uric acid (mg per kg), maximum	100

* The parameter "Particle size" shall not be applicable for intermediate products which are not meant for direct consumption.]

[73][2.4.35 **Breakfast Cereal -** (1) Breakfast cereal refers to ready to eat and quick or regular cooking cereal products. Examples include: puffed, powdered, flaked, cereals or grains, multi-grain (e.g. rice, wheat, oats, millets, barley, pulses, corn etc.) breakfast cereals, ready to eat or cook cereal products made from soy or edible bran, granola-type breakfast cereals, cereal bars, muesli and extruded-type breakfast cereals made from grain flour or powder or meals. This category also includes ready to eat or instant cooking broken or flattened cereals sold as porridge.

(2) Breakfast cereals can be prepared by one or more methods involving cooking, frying, flaking, baking, roasting, puffing, pearling and extruding or co -extruding etc. with chocolate, fruit, vegetables, nuts or any other such nutritious fillings in sweet or savoury taste.

(3) Breakfast cereals shall be prepared from one or more of milled/whole grains and it can be mixed with the products of one or more of legumes, seeds, edible tubers or pseudo-cereals with or without addition of suitable flavoring agents, spices or spice extracts, seasonings, malt derivatives, nutritive and natural sweeteners, salt, dried or candied fruits, fruit solids/ extracts or concentrates, vegetables and their dried formats or extracts, nuts, cocoa and its products, maltodextrin, milk and its derivatives and any other ingredients as specified in Food Safety and Standards regulations.

(4) In case of wholegrain breakfast cereal minimum amount of whole grain shall be 25% on dry weight basis. The product shall contain cereals/pseudo cereals/grains when taken together as the first ingredient in the ingredient list

(5) The grains and other ingredients used in the processing of breakfast cereals shall be of good quality and shall possess a characteristic taste and odor and shall be free from rancid, musty, sour and other undesirable tastes and odors.

(6) Breakfast cereals shall be free from insects, rodent excreta and other such foreign matters.

(7) It shall conform to the following requirements, namely: -

TABLE

S. No.	**Requirements**	**Limits**
1	Moisture content (% by mass), not more than	Products containing dehydrated/candied fruits,

		seeds, nuts, whole grains etc. –10.0% All others - 7.5%
2	Acid insoluble ash in dilute HCl (% on dry mass basis), not more than	0.1]

[75][2.4.36 YELLOW PEA POWDER

Description

Yellow Pea Powder means the product obtained by grinding dehusked Yellow Pea (*Pisumsativum* L.) and shall not contain any added colouring matter or any other foreign ingredient. It shall conform to the following standards: —

S. No.	**Parameters**	**Limits**
1.	Moisture, % by mass, Not more than	12.0
2.	Protein (on dry basis), % by mass, Not less than	22.0
3.	Acid Insoluble Ash (on dry basis), % by mass, Not more than	0.3
4.	Alcoholic Acidity,% (Not more than)	0.18
5.	Uric Acid, mg/kg, Not more than	100]

[77][2.4.37 Multigrain flour (*atta*)

1. Multigrain flour (Atta): Multigrain flour (*atta)*–means the product obtained by milling/grinding blend of clean whole wheat and other permitted ingredients or mixing their flours. The product shall have flour composition obtained from whole wheat ranging from 50-90 % and rest of the flour (10% - 50%) composition shall be from other permitted ingredients singly or in combination. The product shall be free from abnormal flavours, odours, living insects, visible mould, filth (impurities of animal origins, including dead insects).

2. Other Permitted Ingredients. – Processed Soybean**,** Cereals, Pulses, Millets, Psyllium husk, Gluten, wheat bran and fenugreek seeds.

3. It shall conform to the following standards:

S. No.	**Parameters**	**Limit**
1.	Moisture, % by mass, Not more than	13.0
2.	Acid Insoluble Ash on dry basis, % by mass, Not more than	0.15
3.	Gluten, % by mass (on dry basis), Not less than	3.0
4.	Protein (N x 6.25), % by mass (on dry basis), Not less than	10.0
5.	Total Dietary Fiber, % by mass (on dry basis), Not less than	12.0
6.	Alcoholic acidity, % on dry mass basis, Not more than	0.18
7.	Particle size, Not less than	98% shall pass through 40 mesh
8.	*Urease activity(pH units rise), Not More Than	0.02
9.	Uric acid, mg/kg, Not more than	100

*The test of urease activity is applicable in case soya is used.

4. Percentage of Wheat flour (Atta) in the product shall be declared on the label.

2.4.38 Mixed Millet Flour

1. Mixed millet flour means the product obtained by milling /grinding blend of clean millets/pseudomillets or by blending flour obtained from clean millets. The product shall be free from abnormal flavours, odours, living insects, visible mould and filth (impurities of animal origins, including dead insects).

Note: - Millets/pseudomillets are Sorghum/ Jowar (Sorghum bicolor), Pearl Millet / Bajra (Pennisetumglaucum) , Finger Millet/ Ragi/Mandua (Eleusinecoracana),Foxtail Millet/Kanngani/kakun (Setariaitalica), Proso Millet/ Cheena (Panicummilliaceum), Kodo Millet/ Kodo (Paspalumscrobiculatum), Barnyard Millet/ Sawa/Sanwa/Jhangora (Echinochola crus-galli) , Little Millet/ Kutki (Panicumsumatrense) , Brown top millet (Brachiariaramosa)and pseudo-millets areBuck wheat / Kuttu (Fagopyrumesculentum), Amaranth/ Chaulai (Amaranthuscruentus).

2. It shall conform to the following standards, namely: -

S. No.	Parameters	Limits
1.	Moisture, % by mass, Not more than	11.0
2.	Acid Insoluble Ash on dry basis, % by mass, Not more than	0.15
3.	Protein (N x 6.25), % by mass (on dry basis), Not less than	8.0
4.	Alcoholic acidity, % by mass (on dry basis), Not more than	0.18
5.	Total Dietary fiber, % by mass (on dry basis), Not less than	12.0
6.	Particle size, Not less than	98% should pass through 40 mesh
7.	Uric acid, mg/kg, Not more than	100]

Amendment for substitution of highlighted provision

[Moisture, % by mass, Not more than	13.0]

[Operationalized vide direction F.No. Std/SP-11/Milled Flour/2022/FSSAI dated 27.07.2022;
Re-operationalized w.e.f. 27.01.2023 vide direction F.No. Std/SP-11/MilledFlour/2022/FSSAI dated 15.02.2023;
Re-operationalized w.e.f. 27.07.2023 vide direction F.No. Std/SP-11/MilledFlour/2022/FSSAI dated 25.09.2023.]

The enforcement of parameters viz (a) 'Alcoholic acidity' for Bajra Flour (Pearl Millet Flour), Jowar Flour (Sorghum Flour), Multigrain flour (atta) and Mixed millet flour & (b) 'Total dietary fibre' for Mixed millet flour; has been kept in abeyance as per directions mentioned below:

1. F. No. Std/SP-11/Milled Flour/2022/FSSAI dated 27.07.2022 *(abeyance till 31.12.2022)*;
2. F.No. Std/SP-11/MilledFlour/2022/FSSAI dated 15.02.2023 *(abeyance till 30.06.2023)*;
3. F.No. Std/SP-11/MilledFlour/2022/FSSAI dated 25.09.2023 *(abeyance till 31.12.2023)*.

[79][**2.4.39 FERMENTED SOYBEAN CURD AND FERMENTED SOYBEAN CURD (made with *S. thermophillus* + *L. bulgaricus*).-** (1) Fermented Soybean Curd is prepared by fermentation of aqueous extract of soybean. The fermentation is carried out by the mixed cultures of Lactic acid bacteria or any other suitable cultures. It may be plain or sweetened and/or flavored. Milk/ reconstituted milk may be added in the aqueous extract of soybean. If added, it shall not exceed 25% of the final product.

(2) Fermented Soybean Curd (made with *S. thermophillus* + *L. bulgaricus*) is prepared by lactic acid fermentation of aqueous extract of soybean using mixed cultures of 2 strains, namely, *Streptococcus thermophillus and Lactobacillus bulgaricus*. Fermented Soybean Curd (made with *S. thermophillus* + *L. bulgaricus*) may be plain or sweetened and/or flavored. It may contain fruits mango/ pine apple/ orange or other fruits. Milk/reconstituted milk may be added in the aqueous extract of soybean. If added, it shall not exceed 25% of the final product.

(3) Alternate Culture: Fermented Soybean Curd (made with *S. thermophillus* + *L. bulgaricus*) is prepared by mixed culture of *Lactobacillus species along with Streptococcus thermophillus.*

(4) In cases where Fermented Soybean Curd/ Fermented Soybean Curd (made with *S. thermophillus* + *L. bulgaricus*) is prepared without dairy ingredients, following declaration shall be made on the label;

"Non-dairy product"

(5) For the cases where Fermented Soybean curd / Fermented Soybean Curd (made with *S. thermophillus* + *L. bulgaricus*) is prepared with dairy ingredient; following declaration shall be made on the label;

"With low- dairy ingredients"

(6) Fermented Soybean curd and Fermented Soybean Curd (made with *S. thermophillus* + *L. bulgaricus*) shall conform to the following standards, namely: -

Parameters	**Limits**	
	Fermented Soybean curd	Fermented Soybean Curd (made with *S. thermophillus* + *L. bulgaricus*)
Acidity, as lactic acid %	< 1.5	< 1.7
Protein, % by mass, Not less than	3.0	3.0
Fat (% by mass), Not more than	2.0	2.0
pH (Range)	4.0 - 4.5	4.0- 5.0
Total solids, (% by mass), Not less than	10.0	10.0
Urease activity (change in pH), Not more than	0.5	0.5]

[82]**[2.4.40 Papad**. - (1) "Papad or papadam" means a product, prepared from the blend of cereal, millet flour, pulse flour, processed soya flour, fruits and vegetables, vegetable juices, edible vegetable oils, or spices herbs, salt and sugar**.**

(2) The product shall be free from musty and stale odour or sourness and from lumps, dirt and extraneous matter and shall also be free from fungus or insect infestation.

(3) It shall conform to the following requirements, namely: -

S. No.	**Requirements**	**Limit**
(1)	**(2)**	**(3)**
1.	Moisture, (% by mass) not more than	15.0

2.	Acid Insoluble Ash on dry basis, % by mass, Max.	0.25
3.	Alcoholic acidity (with 90 percent alcohol) expressed as H_2SO_4, % on dry mass basis, Not more than	0.2
4.	Uric acid (Not more than), mg/kg	100

(4) Labelling: The name of the product may include the vernacular name (common name or traditional name or major ingredient name) in addition to the name "Papad" on the label.]